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ISSUE 10 / MAY 1990 / £2.95

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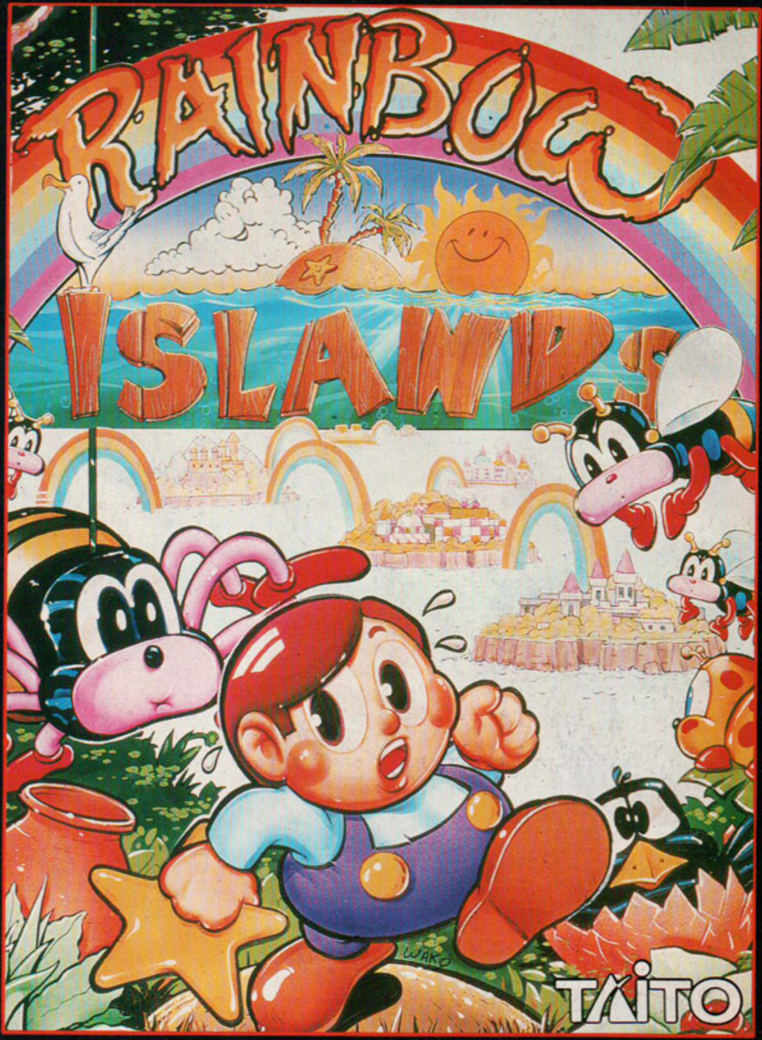


Slip on your magic shoes, practice throwing a rainbow and head for DOH'S ISLAND. Attack Doh as he himself sprays you with an onslaught of bullets. You'd better be quick ... the water's rising!
There may only be one way to defeat the vicious creatures on INSECT ISLAND .. find the Cup of Destruction – you'll have to be pretty slick with your rainbows so as to overcome the Bees, Ladybirds, Spiders, Caterpillars and YIKES!! ... the Bee Hive!!
Oh no! now I wish I'd stayed with the bees! They're just buzzing babes compared to these tanks, planes and 'copters on COMBAT ISLAND. Yes, it's time to beat these guys at their own game and take to the air ... now where's my Box of Wings?
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The very best in original game play featuring all 7 islands, faithfully reproducing the fun and excitement of the Arcade hit.



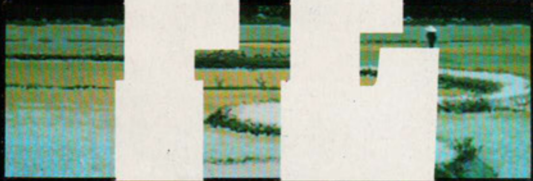




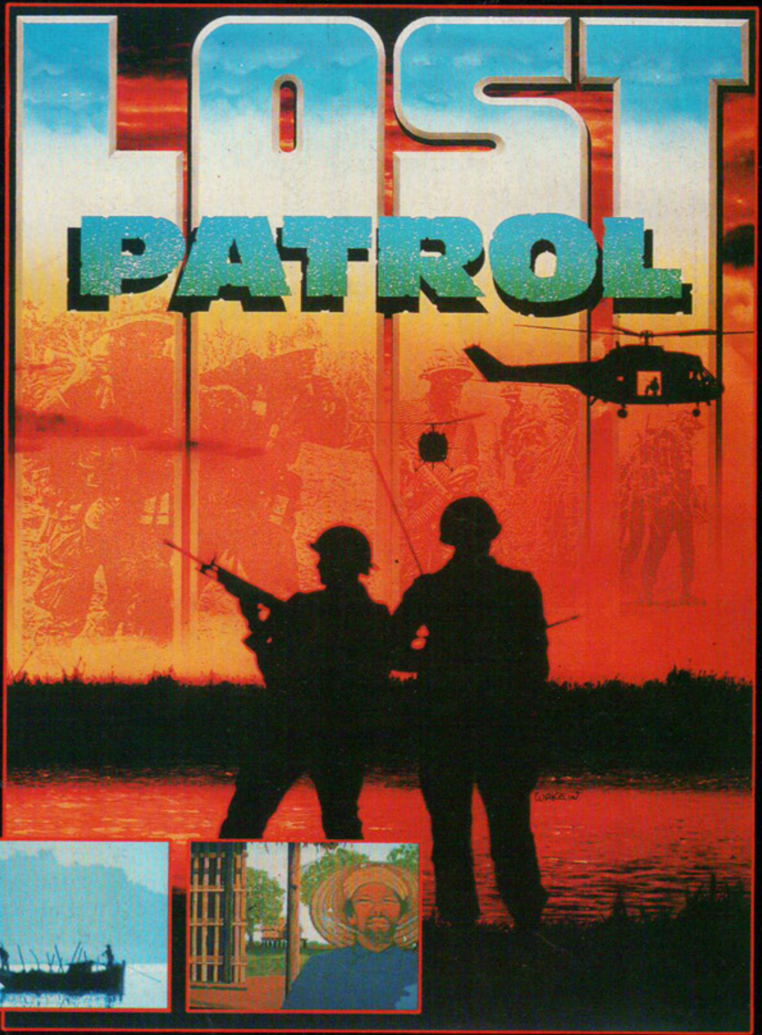


Bit Machine THE

FEAR



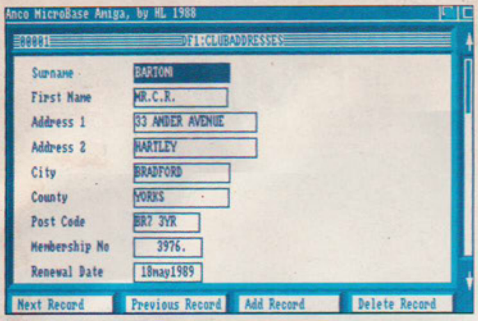
We were glad to be going home ... seven weary survivors looking forward to a real cup of coffee and a piece of mom's apple pie. But then it happened ... our chopper took a hit, tailed-out and our pilot managed a crash landing – but he won't be seeing 'I Love Lucy' again. Now we're foot-slogging a wide, flat trail but its slow, dangerous curves are flanked by impenetrable bush. I know Charlie knows we're here – maybe we can surprise him, maybe not ... that's just *one* thing that helps our insomnia ... that and the psycho in my squad – I gotta figure out who it is before the morale factor becomes our worst enemy.

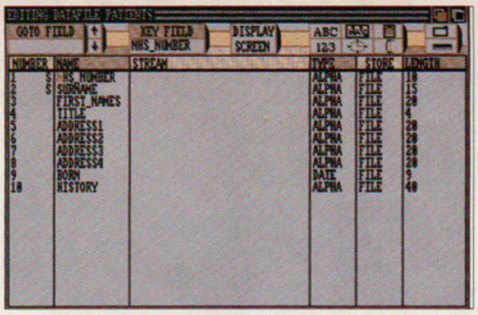




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WORK HARD... DATABASES P 77



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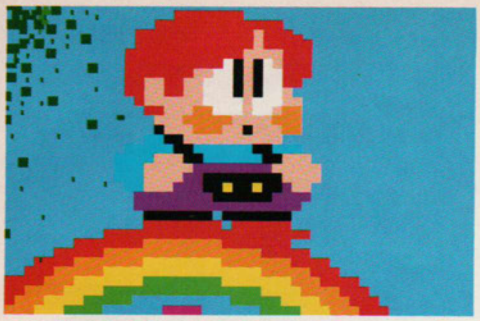
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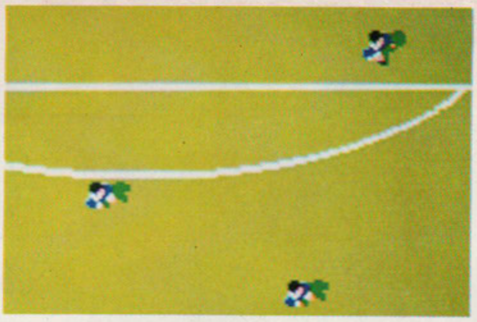
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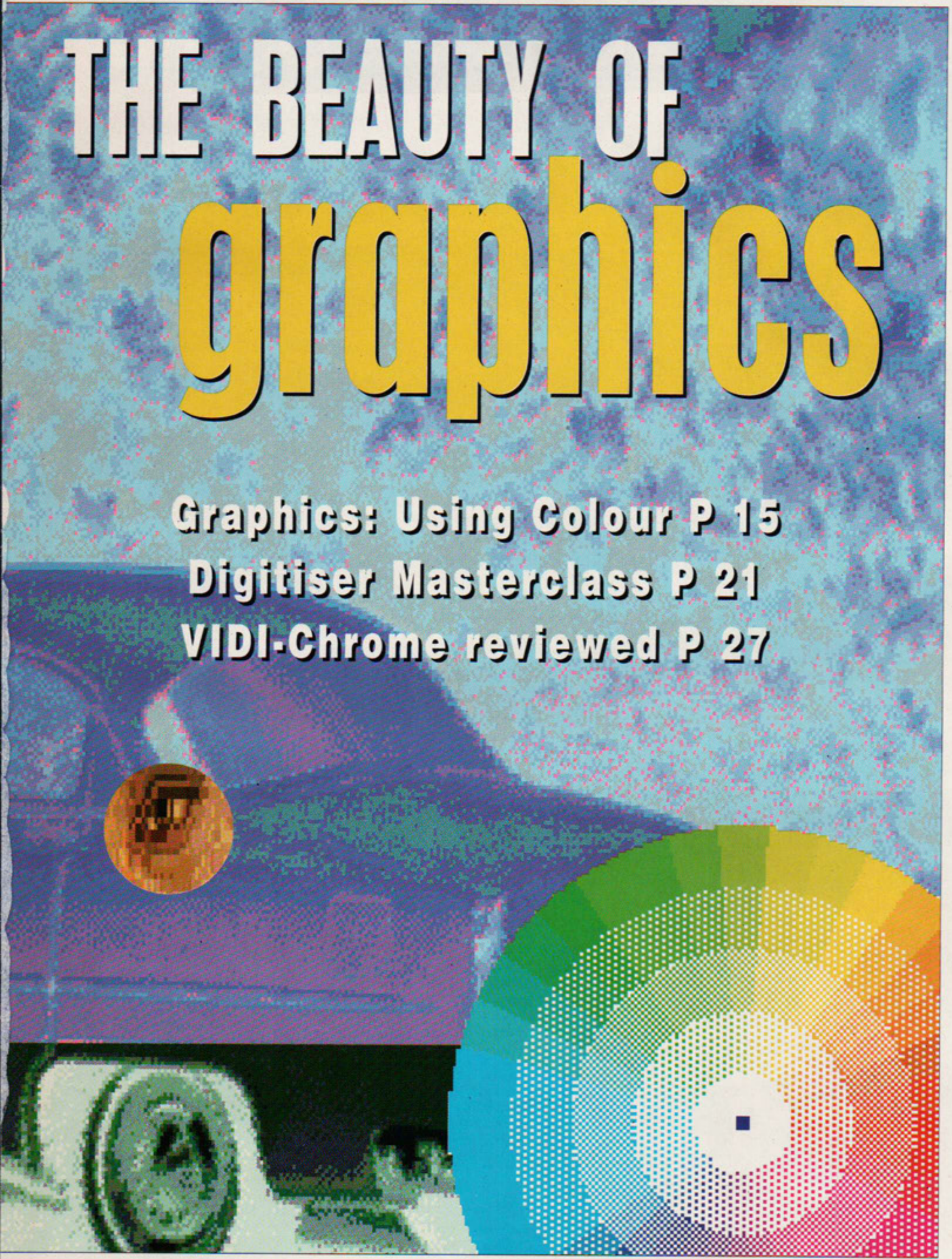
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PLAY HARD... SCREENPLAY P 31



DISK EXTRA

HAMMERFIST 103

SCHIZOPHRENIC CYBERNOIDS FROM VIVID IMAGE

WIPE OUT: Playable demo of Gonzo Games' hoverboard challenge ■ **BIRDS SAMPLER:** Real Things' latest animation pack for DPaint III ■ **PONTER ANIMATOR:** Heaps of fun with animated mouse pointers ■ **KEYBIZ:** Add typewriter sounds for that real journo feel ■ **GAMEBUSTERS:** Devious pokes for Mutant Camels II, Captain Fizz, Interceptor, Joe Blade I & II ■ **MEGA WB:** Huge scrollable Workbench screen.

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REVIEWS

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A500 IS FLYING HIGH

Commodore have launched a new A500 bundle that will undoubtedly keep the Amiga riding high through the summer months. The bundle is called 'Flight of Fantasy' and contains an A500, F29 Retaliator *and* Rainbow Islands *from Ocean,* Escape from the Planet of the Robot Monsters *from Tengen/Domark, and* Deluxe Paint II *from Electronic Arts.*

This new bundle costs £399.99 – the same price as the Batman pack, which has been out for six months. It does not mark the end of the Batman pack either – that is being continued at the same price and is to be re-promoted to coincide with the launch of the Batman movie on video.



Commodore's new A500 bundle which (minus the flying goggles) will take you on a Flight of Fantasy with *F29 Retaliator, Rainbow Islands, Escape from the Planet of the Robot Monsters* and *Deluxe Paint II.*

This latest launch is yet another coup for Commodore, capturing some of the most exciting recent game releases to make this the most up-to-date and interesting bundle. It's also an indicator of the success of both the Amiga and the bundles that Commodore can have two identically-priced packages out at the same time – a move previously unheard of on the personal computer scene.

A quick look at the software contents of the bundle tells you all you need to know about its value for money. *F29 Retaliator* is one of the most eagerly-awaited games of the year and is set to be a classic battle/flight simulator. *Rainbow Islands* is already a recognised success, as you will see from this issue of *AF*, and should prove even more of an attraction than *New Zealand Story* did in the Batman pack. *Escape from the Planet of the Robot Monsters* is also a bang-up-to-the-minute game that rounds off the game side nicely. Then, of course, there is *Deluxe Paint II*, which was also in the Batman pack, and is still an excellent art package.

Meanwhile, the Batman video that will be hitting the small screen soon features an advert and competition from Commodore on the front of the tape. The competition consists of riddles to answer, giving you the chance to win one of 10 Batman Packs.

At *Amiga Format* we are delighted with the new bundle, because Commodore has once again delivered what the public wants – the best computer with the best and, more importantly, most recent software with it. It's also good to see them continuing with the Batman pack, giving the public the choice between the two – not forgetting the Class of the '90s pack, intended for the more educationally-minded.

Where does the Amiga 500 go from here? The signs are that there will be another new offering for the Christmas period, and there is talk now of further 'specialist' packages. We would certainly like to see bundles aimed at music and video, areas into which the Amiga is exploding with great success already. ■

THE YEAR ACCORDING TO MIRRORSOFT ▸

Mirrorsoft recently whisked various respected members of the computer press off to France to brief them on what they and their affiliated labels are up to this year. And an awful lot it is too...

IMAGEWORKS

This is Mirrorsoft's own main label on which all sorts of goodies pop up, from coin-op conversions like Blasteroids to original games like Interphase. In the packaging of selected Imageworks and PSS games you will soon find a new 'Great Escapes' offer – collect five vouchers and you get a free holiday for two in England, Scotland, Wales or Jersey.

BACK TO THE FUTURE – PART II

This is Mirrorsoft's first film licence, but not the last – they already have the rights to *BTTF III*. It's still some way off release, but, as you can see from the screenshot, the game is coming together as a diagonal scroller.



Back to the Future – Part II.

GRAVITY

The new game from Ross Goodley, previously responsible for games like *Meltdown* and the Amiga *Bombuzal* – but this one is an original. Check out the next issue for a full review.



The Bitmaps' latest, *Cadaver*.

THEME PARK MYSTERY

An arcade adventure set in a theme park, where you get to play all sorts of wacky games while trying to solve the mystery. It has been written by Brian Howarth, whose adventure-writing career goes all the way back to 1981 and encompasses the Scott Adams adventures and *Heroes of the Lance*, the AD&D game.

CADAVER

The latest from the Bitmaps is a real departure because it's an isometric 3D arcade adventure – very Ultimate. There's a lot of puzzling involved, all of which is controlled using the joystick. It's a big game too, five levels of a castle, each with 100 rooms. Not forgetting their usual high standard of graphics and effects. Expect it soon.

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CHECKMATE'S A1500 ARRIVES

Is it a bird? Is it a plane? Is it a new machine from Commodore? No, none of those – although Commodore have expressed a strong wish to take a look. This is the prototype of Checkmate Systems' adaptation of the Amiga 500, known as the A1500.

The machine will be available complete – it goes into production even as you read these words – but the basic idea is that A500 owners can buy the necessary parts and perform the conversion themselves. It can be assembled, Checkmate promise, "by most confident people". Alternatively, you can send your A500 off and have Checkmate do the conversion for you, in which case they will provide a new warranty themselves, its length dependent on the age of your original machine.



The A1500, an adaptation of the A500, offers a separate keyboard and brings disk drives and joystick ports to the front.

The A1500 is incarnated in a sturdy metal CPU case with a separate keyboard, reminiscent of the Commodore 128 or even the original Amiga, the A1000. The disk drive is moved to the front, with space for a second internal floppy drive, and the mouse or joystick ports are also placed handily at the front of the machine. The standard edge connector from the left-hand side of the Amiga is retained to ensure compatibility with any add-ons you may already have, but there is room inside the case for any half-height hard drive unit, such as the A590, to be installed instead of a second floppy. Badging is distinctive and the general look is very much that of an official Commodore computer.

Options include a full Amiga video slot (for use with Flicker Fixer boards or genlocks) or a full MIDI interface, both of which will fit internally. An expansion unit can be fitted on top of the base to provide space for any three A2000 expansion cards, including processor accelerators – extra expansions can be added for more cards or for more half-height hard drives. Finally, both the base unit and expansions will fit in standard 19" racks, which could open up a whole new market for the Amiga in professional musical use.

Pricing details for the kit, the adaptation and the complete machine have yet to be confirmed, but you can expect to pay around £200 to have your A500 converted and uprated to a near-A2000 spec. Checkmate on 01 923 0658 can tell you more. ■

RIDERS OF ROHAN

Plunge yourself into the world of JRR Tolkien, with this game based on a part of the second of the Lord of the Rings trilogy, The Two Towers. It may be the first of a series.



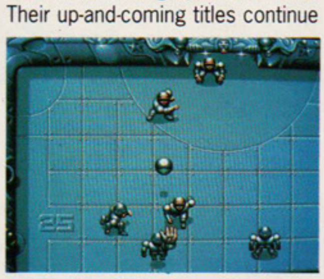
***Riders of Rohan* – new role-playing from Lord of the Rings.**

SPEEDBALL II

It's back, bigger and nastier than before. The playing area of this future sport has doubled in size and there are more weapons to choose from too. There is also much more control over the players attributes – a sort of *Kick Off Player Manager* with blood.

PSS

PSS are well known for their war games and have been introducing more and more graphic elements. Their up-and-coming titles continue to branch out into new areas with *Battlemaster* (a fantasy role-playing game) *Harpoon* and *Red Phoenix* (based on works by Larry Bond, the co-author of Red Storm Rising) and *Wolfpack* (which simulates the naval events of 1942 in the North Atlantic).



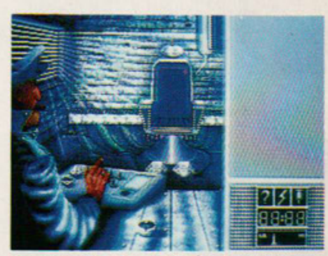
More futuristic rough stuff on the way in *Speedball II*.

DUSTER

Realtime are another prestigious programming team working on a game for Mirrorsoft, featuring their renowned filled-3D graphics. Their new one combines these with a fantasy role-playing section to create the bug-hunting mercenary world of *Duster*.

KILLING CLOUD

Vektor Grafix are also best known for their 3D flight sim *Bomber*, but their new game is an action adventure using the graphic techniques they've developed, but in a different context.



Killing Cloud – latest from Vektor Grafix, authors of Bomber.

DYNAMIC DEBUGGER

This one has been a long time coming, but problems with developing a HAM game mean there's no release date yet. Watch this space for info on when it's finished.

BELOW: The latest game from Realtime – *Duster*.



FTL

FTL are the people behind *Dungeon Master* and with a bit of luck we will be seeing the add-on game disk *Chaos Strikes Back* fairly soon – but you will still need a 1 meg machine to run it. They are also working on *Dungeon Master II* and there is even talk of a game design program. Don't hold your breath, though – they will not release anything until they

are totally happy with it. And why won't they do an Amiga version of *Oids?*

CINEMAWARE

Cinemaware are one of the most prestigious software houses around and they have big plans for the year. There are two more in the *TV Sports* range – *Baseball* first and then *Boxing*. Closer is *Antheads*, the data disks for *It Came from the Desert* to take you on another '50s B-movie jaunt.

Wings is another new area for Cinemaware, because it's a flight sim, though done in their inimitable graphic style. It's set in World War One with over 300 missions to fly.

SPECTRUM HOLOBYTE

Spectrum Holobyte had a massive success last year with *Falcon* and the first *Mission Disk* and they look set to follow it up equally impressively with the second *Mission Disk* and the new "full-blown battlefield strategy game" *Flight of the Intruder*. The game is set in



Flight of the Intruder.

Vietnam in 1972 and, unusually, is based on a book. There is even a film, starring Sean Penn, under production, which could make a fascinating tie-in.

Also planned for the Autumn are *Vette!* and *Tank*, sports car racing and tank simulations respectively. That's a pretty full release schedule for specialists like Spectrum Holobyte.

MILLENNIUM

Another addition to the Mirrorsoft stable is a deal with Logotron to market their new label Millennium. All Logotron games will now be issued under the new name. The reason for the change is simple enough – Logotron have long had connections with both business and leisure software and as they've recently dropped the business side they no longer wish to be associated with the business sector. Their first game is *Kid Gloves* which is reviewed in this issue. Following that are some 3D vector games that look to have some stunning routines. They are *Resolution 101* and *Thunderstrike*. Nearer to release is *Cloud Kingdoms*, a cutesy puzzle solving test of reflexes and mind.



DRIFTING ON AN AMIGA

Coming soon from Impressions will be a wargame based on one of the most famous battles in British history, the battle of Rorke's Drift. In 1879 when the Empire was at its height 137 British soldiers fought off an attack from approximately 4,000 Zulus. The battle was so fierce and the British fought so well that a total of 11 Victoria Crosses were awarded. Soon you'll have the chance to control all the British soldiers, to test your powers of strategic planning and to win a battle against odds of almost 30-1.

NEW KIDS ON THE BLOCK

Outside eyes have been gazing in on the games industry and seeing pound signs. Electrocoin, the long-established arcade machine manufacturers and distributors, have recently set up a company called Electrocoin Software with the intention of converting arcade games to home machines. With over 15 years' arcade industry experience Electrocoin Software look to be in an enviable position when it comes to grabbing the big licences and could well prove to be stiff competition to the likes of Ocean and US Gold. The first game, a conversion of the SNK game Time Soldiers, looks likely to be here fairly soon as ES have five in-house programmers already working on the conversion. See just how good a job they did in a forthcoming issue of Amiga Format.

MORE CHRONO

Following the success of their adventure game Chronoquest, *Psygnosis have decided to release a sequel.* Chronoquest II *(imaginative lads the Psygs) will be icon-driven and will follow on directly from the first game, in which you were travelling through time to find your father's murderers. Unfortunately, it looks as if you're not going to get home as soon as you thought you would – because the damn time machine has run out of fuel. Only skilled puzzle solvers need apply to be involved with this one.*

'BIRDS' TAKES WING

In keeping with their promise to release one new Real Things package every four months, RGB Studio's Real Things – Birds is about to hit the streets – or if the realism is to be believed – the shoulders of passers-by!

Continuing the hierarchical structure of RGB's *Horses* package, *Birds* is much more than clip art – and though the 'educational' label will inevitably be attached, it is also much too much fun and far too useful to be just educational.

Like *Horses*, *Birds* is designed to be used with *Deluxe Paint III* or any other package that supports IFF pictures, Anim animations and AnimBrushes. It is *Deluxe Paint III* that really brings it to life allowing complex choreographies of background, foreground and several animated brushes to intertwine on the screen.

The package contains a dozen species of birds – predominately water birds – in great detail, and includes over 40 animbrushes. Some of these are of "flocks" at a distance to give static pictures 'life', but the majority are detailed studies of the various species in their habitats, feeding, preening etc. There is also a 'self-drive' demonstration of how bird flight works that gives great insight into the motion patterns of birds as they flap their wings.

To complement the bird images is a full set of brushes and backdrops that allow DIY scenery to be constructed. Among these are the two best rendition techniques for water that have yet been produced on the Amiga – both are stunningly realistic.

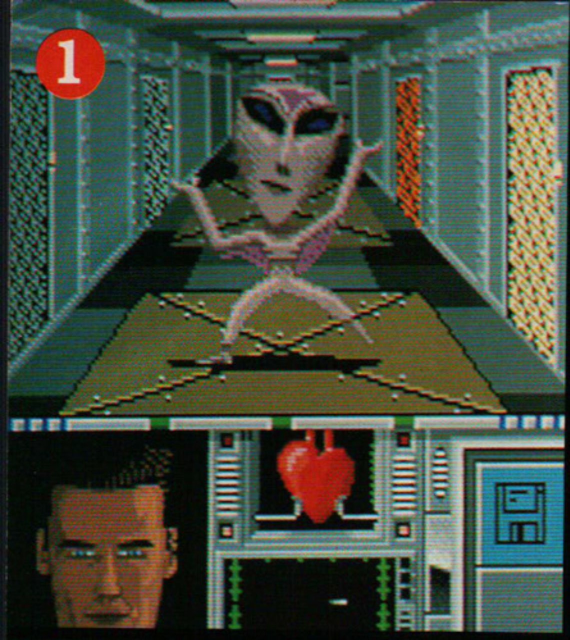
Overall the package is much bigger than *Horses*, filling two disks – this will be reflected in the price, £29.95 instead of £24.95. A full review of *Real Things – Birds* will be the main feature of Issue 12's graphics section.

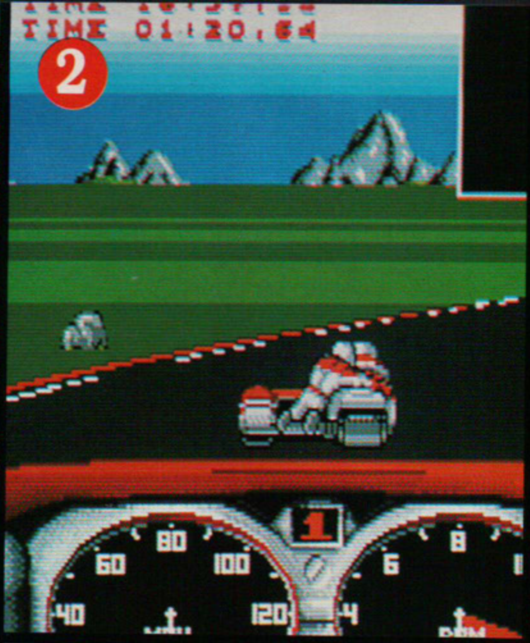
Brian Larkman



The Kingfisher is a fine sample of the new *Real Things – Birds*.


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COMING ATTRACTIONS

Noticed just how good games are getting over the last couple of months? Want a sneak preview of what's still to come? Read on!

1 Federation Quest One – BBS Jane Seymour

Sheffield lads Gremlin have been really busy lately: *Venus* is coming along very nicely thank you and it looks like *Federation Quest One – BBS Jane Seymour* is about to arrive in the near future. This curiously-titled game sees the player in the role of a high-ranking space commander about to set off on a rescue mission to the biological survey ship Jane Seymour which is stuck somewhere in the Orion arm of the galaxy. Spooky, huh? Get there and you'll have to repair the ship, round up any aliens that may have escaped and then bring her home.

2 Combo Racer

If that's all far too far-fetched for your intellectual brow and you prefer to find your excitement on good old terra firma then Gremlin have a first that may get your juices flowing. "A first!" you cry. Yes indeedy, The Grems, in 1990, have managed to find something that hasn't been done before – combination motorbike and sidecar racing. Combo Racer (imaginative lads the Grems) gives you eight tracks to race around, all in super-smooth 3D, and includes an editor so you can build your own.

3 Impossamole

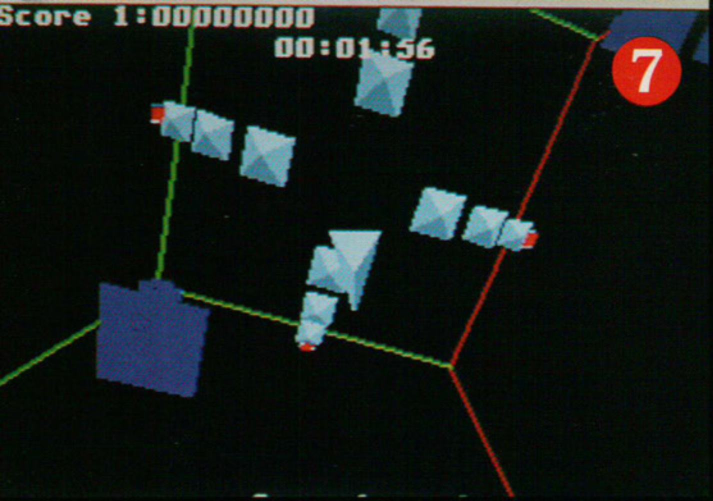
Last month we broke the news that the loveable sprite Monty Mole was due to make a return and as we know perfectly well that you're all waiting with bated breath we thought we'd show you just how his latest game is coming along.

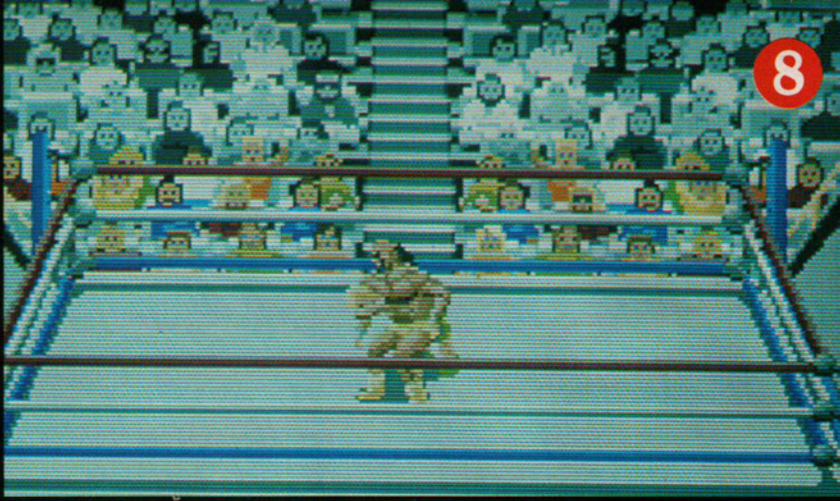
4 Astro Marine Corps

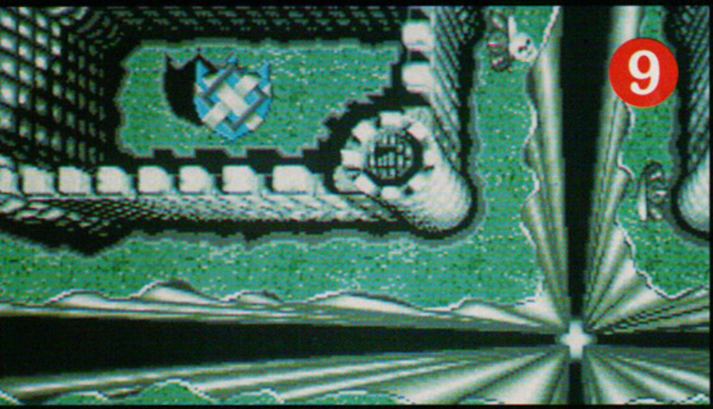
From Dinamic comes this arcade blast giving the player the chance to get his sweaty mitts on nine super-powerful weapons with which to go out blasting criminals. Seems a bit heavy handed? Not really, when you consider the crims in question are a mixed bunch of alien races hell-bent on taking over the galaxy. In fact the only way to stop them is to blast them to kingdom come – and the only man for the job is a member of the AMC.

5 Colorado

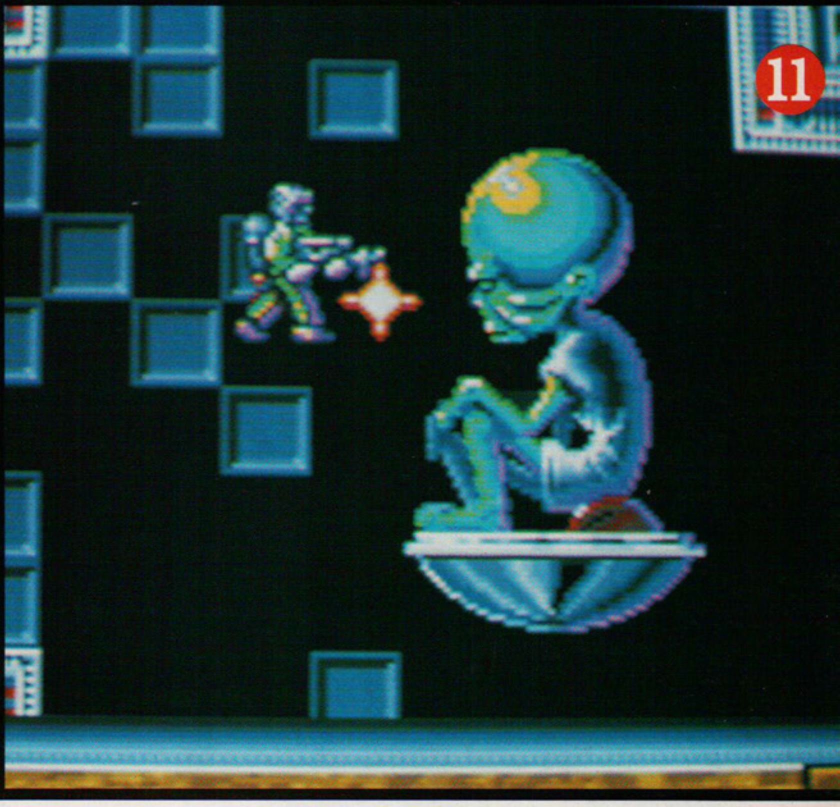
After the brilliant *Dragons Breath*, what will French lovers Palace follow up with? The answer is another French game, this time from recent signees Silmarils. *Colorado* is an arcade











adventure sending the player back in time to nineteenth century Colorado (imaginative lads the Silms) and into the shoes of drunk and womaniser David O'Brian. Now ol' Dave has happened across an ancient map which will lead him to the lost goldmine of the Cheyenne – but only if he can get there, because the journey will be fraught with dangers including hostile indians, trappers and wolves. There are plenty of arcade sequences to take part in and more than just a couple of logical puzzles to solve.

6 Flimbo's Quest

System 3's *Last Ninja II* is coming along nicely as is the new game *Flimbo's Quest*. It's a beautifully-animated cartoon platform game for fans of the genre, featuring seven levels created by a mad professor who's captured Flimbo's girl. The levels are infested with all manner of meanies created by the professor, so sharp wits and bravery are the order of the day.

7 Fatal Gravity

A novel puzzle game from Infogrames. The player controls a triangle and the game is played by guiding the triangle through several rooms. Unfortunately, the only way to get out of most rooms is through doors halfway up the wall. The player must bounce onto suspended platforms and bounce from one to the other to exit the room. Wacky stuff that's not only good looking but promises to be a bit of a mental excercise too.

8 International Championship Wrestling

Grapple fans will think all their Christmases have come at once when they get their hands on Hewson's latest. One or two players can get to grips with international stars like Ivan 'The Bear' Trotsky (imaginative lads the Hews) and wrassle them all around the ring – oh! Just think of the hours of fun you'll be able to have as you go after that elusive Championship Belt (handbags for hitting your fave baddie are not included in the packaging).

9 Lords of War

Arcade action with a medieval flavor is on its way in *Lords of War* from Gainstar. Four knights get together to go biff a nasty dragon 'cos whoever succeeds in doing this will inherit a kingdom. However, only one will get the chance and to find out who that will be, the lads in shining will battle with each other first. You are one of those knights – and with a little luck, lots of courage and a bit of magic it just might be you that gets the booty.

10 Island of Lost Hope

There's more treasure to be found in this Gainstar graphic adventure, which gives you the chance to wear the boots of a young seafaring captain in pursuit of the treasure of Forgotten Souls. Things were going well until you ran into the infamous pirate Captain Black (imaginative lads, the Gainies). Sea dogs and adventurous types should sign up and climb aboard real soon.

11 Dan Dare III – The Return

Forty years on since his first appearance in the Eagle, Dan Dare is back on the monitor in *Dan Dare III – The Return* from Virgin (imaginative lads, the Virgs). Danny boy has escaped from the Mekon after being captured and transported to a huge satellite for 'Treenisation'. All he has to do now is explore the satellite and find enough fuel to power his escape rocket, which just happens to be lying around. Dan fans, prepare.

Virgin are also cashing in on the World Cup in a couple of months' time with the release of *World Cup Soccer '90*. An arcade footy game featuring all the usual bits and bobs plus a couple more, such as injured players being stretchered off the pitch. Mmmm... sounds like fun!

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BRIAN LARKMAN throws away the oils and turpentine to show how important use of colour is...



Venus RISING FROM THE palette

After working with a Quantel Paintbox for BBC2's "Painting With Light" series, the well-known American painter Howard Hodgkin criticised 'electronic painting' for being so quick and clean, depriving him of time to think! Obviously for some people the mixing and cleaning time is a period of thought and contemplation – something we all need to indulge in as often as possible. But usually, when we just want to express an idea as quickly and cleanly as possible, what a hassle it is mixing colours the conventional way – bottles of oil and turps or pots of water, tubes of paint, dirty rags, dirty brushes, messy palettes, all taking up space and time with the constant cleaning, mixing and remixing – just to get the right colour!

We don't have the vast facilities of the Paintbox, but even with an Amiga the chance to select the exact colour and shade you want from a large range and get on with the painting can be a liberating experience. Nevertheless, electronic colour is still a difficult medium to handle effectively so for this next tutorial we are going to concentrate on colour – what it is, how it works and how to use it.

Learning about Colour

If the Amiga were of no use for anything else it would have great value as a way to learn how colour works. Almost from the moment that you turn on it starts the educational process. The first clue comes when you set the screen preferences for yourself: the colours are controlled by three sliders

that vary the amount of red, green and blue present in each colour. We have all set up our own lurid screen display by trial and error, but how do the sliders really work?

The screen display of virtually all colour computers – and all TV sets as well, for that matter – is determined by the relative values of red, green and blue light, known simply as RGB to the cognoscenti. These three colours of light are the so-called 'additive' primary colours which can be mixed together in varying amounts to produce light of any colour. When all three of the pure primaries are mixed, the result is white light. Although a little knowledge of physics tells us different, it always seems strange that white light is made up of the complete spectrum of the colours. How can such distinctive primary colours as red, green and blue apparently cancel each other out and produce what common sense tells us is the absence of colour? But, of course, they do: the addition of these three primaries, red green and blue light, forms pure white.

Red, Green and Blue Ham!

If you have *DigiPaint 3* or *Photon Paint* you can experiment with this effect to understand it better. Clear

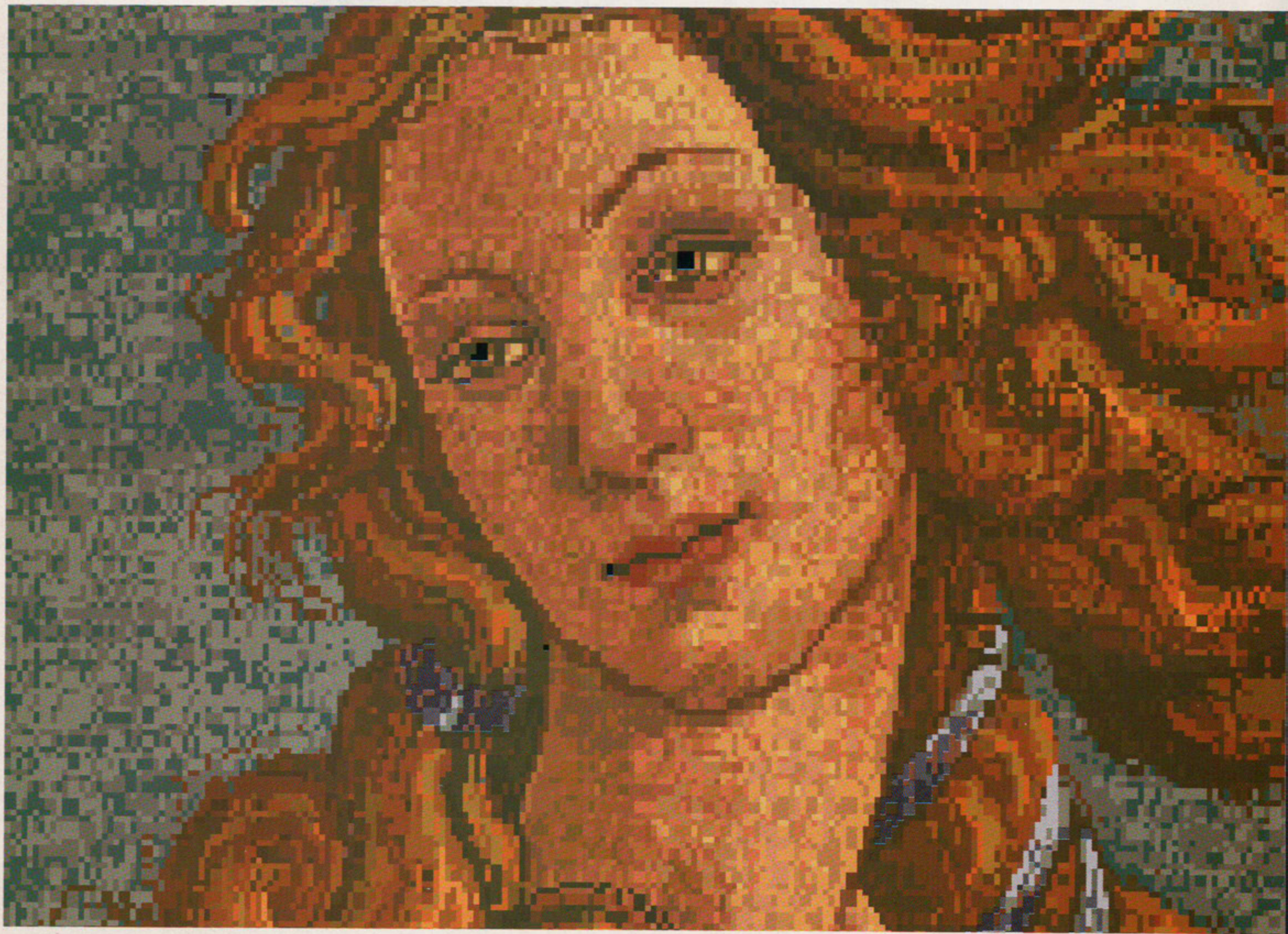
Forcing The Palette

Near Right: "GoldVenus" Top, "OchreVenus" Bottom. Far Right: "PinkVenus" Top, "PinkVenusDGV" Bottom.



An easy way to change the mood of a picture by just changing its colours is to force it to fit a new palette. This is only really possible in a non-HAM system. So that you can copy these effects exactly from this tutorial a standard picture, available from every version of *Deluxe Paint* has been used – "Venus". To produce these changes of character, various other 'standard' pictures were loaded into the spare screen after "Venus" had been loaded to the main screen. The new palette is loaded with the new picture and "Venus" initially looks a mess. This is immediately rectified by selecting Remap from the Picture/Change Color menu. The results are shown alongside. "GoldVenus" uses the "KingTut" palette, "PinkVenus" uses that from "Gorilla", and "OchreVenus" the "Africa" palette. As you can see, the success of this method depends on the number of suitable colours in the new palette.

A different but sometimes more effective method of forcing palettes is to use *DigiView*. A proper description of the use of *DigiView* for this purpose will be given in a future Digitising Tutorial. Briefly, the method is to load the new palette first using *DigiView's* convenient Load Palette menu selection, then Freeze the palette on the Palette Control Panel. The correct number of colours must be chosen on the Color Control Panel (32, 16, 8 etc – not 4096!) and then the picture loaded. The effect can be seen in "PinkVenusDGV" which again uses the "same "Gorilla" palette but with a quite different result.



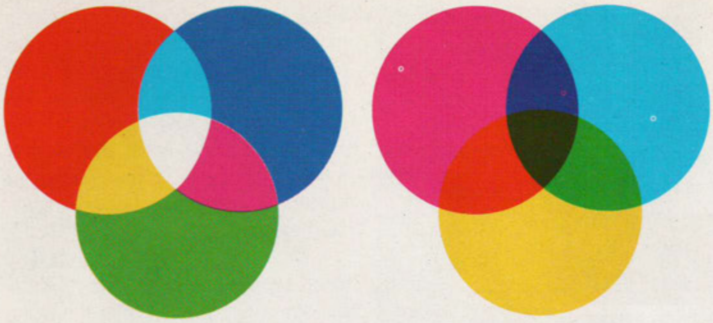


DIAGRAM ONE: 'RGB – CMY'
On the left are the 'additive primaries', red green and blue. These three colours of light combine to produce white, but mixed in different proportions will give any other shade.
On the right are the 'subtractive' primaries, cyan, magenta and yellow. These three colours of paint or dye can be combined to produce almost any other shade. All three together should give a reasonable black.

the screen to black and choose 'OR' from the Mode menu. With a circular custom brush about 3cm across (and, with *Photon Paint*, 'Trans' and 'Solid' selected on the brush menu), try painting pure red, green and blue (F00, 0F0, 00F), partly superimposing them as in Diagram One, 'RGB – CMY', above. (If it helps, imagine that you are in a theatre and have three circular spotlights focused on a blacked-out stage). Where they overlap, notice the colour effects. Red and green make yellow, red and blue make magenta, blue and green make cyan and all three make white; suprising, but true.

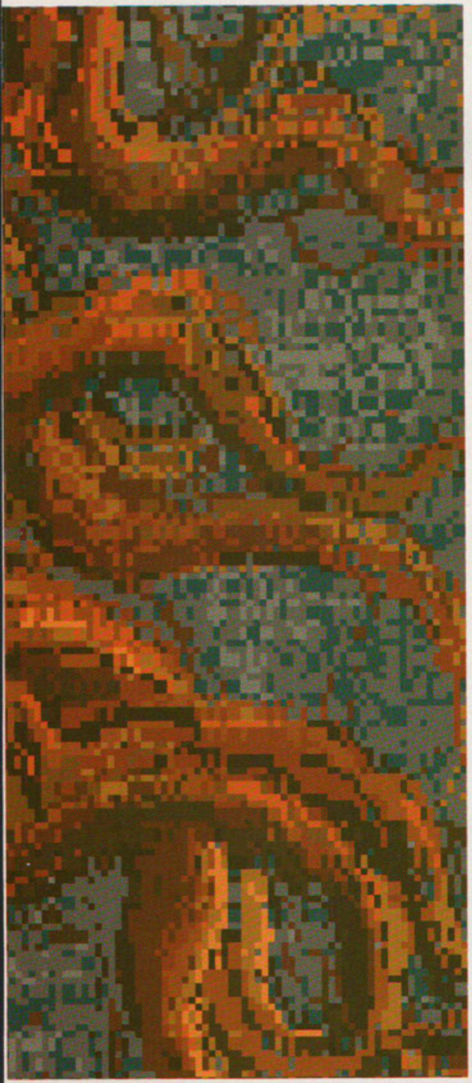
Almost as strange is the behaviour of paints or dyes on paper or cloth. This time the primary colours are Cyan (blue/green), Magenta (blue/red) and Yellow – the 'subtractive' primaries. Many people remember mixing blue, red and yellow paints at school to get almost any shade – this is a reasonable approximation of the effect of cyan, magenta and yellow. Since these primaries are subtractive, a mixture of all three results in the absence of all colour – black – though in the printing process used for full-colour magazines like this one some pure black ink is used as well to get a good, deep, opaque black. Again the process can be simulated using a HAM paint program, this time using the 'AND' mode on a white screen (also shown in "RGB – CMY"). Here cyan and yellow make green, yellow and magenta make red, magenta and cyan make blue and all three together make black.

In theory this is how most print processes create a full-colour picture – superimposing various shades of cyan, magenta and yellow – though in reality the process is very difficult to manage effectively. This explains why it is so difficult to get a good screen-dump in colour, even from the most expensive printers; the printer is blending CMY ink on dull paper that can only reflect light, but the screen display is mixing illuminated RGB values, literally 'painting with light'.

The Saturated Value of Hue!

Although the pure, rich primaries of RGB and CMY have been used for the examples so far, the screen and the printer both use a whole range of 'values' and 'saturations' of these hues to achieve a broad spectrum of colours. The 'Colour Wheel' illustration over the page shows a range of about 72 of the fully-saturated hues that the Macintosh can display. These fully-saturated hues are around the outside. *(Apologies for using a Macintosh example, but it makes life easier since we use Macs to lay the mag out – Ed.)*

On the inner rings are shown various shades of the colours achieved



HAM AND SHAM

In a HAM display very few pixels have their own uniquely-defined colour. Instead, they derive their component RGB levels from the pixels adjacent to them. The advantage of this is that many different colours can be displayed, by a sort of 'domino' effect; the disadvantage is that updating a changed display can be quite slow. To understand how HAM works we need to get a bit technical.

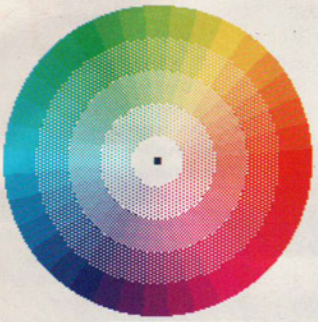
To display a picture on screen the colour of each pixel must be stored as a list (the 'bitmap') in memory – starting at the top-left pixel and ending at the bottom-right. Each colour used must have a unique 'code' to describe it, and the more colours the more complex the code. On the Amiga and other 16-bit machines, four bits are usually used to define this code. In binary, this equals 16 unique colours chosen from the 4096 available and these are kept in a 'table' or register of the colour palette currently in use. With some hardware and software tricks this number can be increased to 32 or 64 – above this the 16-bit bus cannot normally cope.

In HAM mode, 6 bits are used to define the colours. The first two – the 'significant' bits – can have four binary values, 00, 01, 11, or 10. If the value is 00 the next four bits define one of the 16 'normal' colours in the register. These can be used anywhere on the screen without causing problems. If the value is one of the other three possibilities, 01, 10, or 11, the colour of the pixel is instead derived from that of the one before it. Now the colour is the same except that one of its RGB components is different – 01 changes blue, 10 changes red and 11 changes green. The remaining four bits define the value of this changed component.

In effect this means that if two very different colours are to be adjacent there must be a 'fringe' two pixels wide between them. For example between Black (000) and White (15,15,15) will be Red (15,0,0) and Yellow (15,15,0) unless white is one of the 16 'register' colours. It is this fringeing or 'ramping' that is the great limitation of HAM. Nevertheless careful choice of the register colours can almost eliminate the effect and several sophisticated programing tricks have been developed to overcome it though the application of these slows down operation.

SHAM or SuperHAM is a software technique that has been used on the Atari ST for some years to provide a HAM-like 'omni-colour' mode. In effect it involves palette switching 'on-the-fly'; every line of the screen display can have a different 16-colour register that is switched at the start of each horizontal raster scan. Such a technique allows all 4096 colours of the Amiga to be used on screen simultaneously in the highest resolution without any ramping; it is also very memory intensive and locks up the processor almost completely. The latest version of NewTek's digitiser software, DigiView v4 and ASDG's 'ScanLab 100' scanner software both use versions of SHAM to produce 4000-colour hi-res pictures.

DIAGRAM TWO: 'COLOUR WHEEL'



by varying the saturation and value. In simple terms, the addition of white to a colour decreases its SATURATION and the addition of black decreases its VALUE. Most computer painting systems will allow you to vary the Hue, Saturation and Value (HSV) as well as the proportions of Red, Green and Blue in a colour, but not *DigiPaint 3* which uses a different, though equally valuable, system. Experiment with the Hue, Saturation and Value sliders in your favourite program. The "Waterfall" Tutorial below is a reasonable starting point.



Colour Cubed

The colour wheel, although it illustrates the relationship between the various saturated hues quite graphically, is too large to use for selecting colours in the course of working. *(Try telling that to the AF art department: they have to use colour wheels on the Mac – Ed.)*

Instead, the developers of HAM drawing systems have very sensibly devised or adapted the 'Colour Cube'. *Photon Paint II* and *DigiPaint 3* both have similar 'colour selection' squares which represent sections through the cube along the three axes, red, green and blue. In use the squares are better thought of as holding the proportion of one colour steady – the left square red, the middle green and the right blue; try it and see for yourself. Holding down the left mouse button and moving the pointer around within the left square changes the green and blue values but leaves the red alone. If this is still a bit too much to grasp don't worry. It is, in any case, practice that is called for and this method of selecting colours 'by eye' quickly becomes intuitive if you use it often.

Palette Management

DigiPaint, going its own unique way as usual, also provides a 'Tone' selector showing all of the tones or 'values' available for each of the 16 register colours (see sidebox 'HAM and SHAM' on the previous page), and a 'Range' selector showing the spread of 8 colours used for the Range drawing mode. *Photon Paint* provides instead a palette of 48 colours in addition to the 16 register colours. These can be defined by the user to set up a more limited or 'working' palette that can be returned to frequently and used throughout a painting so as to impose a visual style and continuity.

This is a traditional painting technique that will be familiar to conventional artists and designers, and provides a useful transition for users of *Deluxe Paint* moving to HAM painting. Sometimes choosing from the full range of 4096 colours is more than a bit formidable.

Non-HAM painting systems like *Deluxe Paint* or Zoetrope are constrained to a total of 32 colours maximum so the concept of a limited or 'managed' palette must be accepted and absorbed without delay. *Deluxe Paint* and *Photon Paint* both provide several tools that aid palette management. Individual colours can be modified with the RGB/HSV sliders and moved or exchanged with others on the palette. A spread of tones between two colours can be produced based on RGB values (and even on HSV values in *Photon Paint*).

In *Photon Paint* it is usually easy to find exactly the right colour from the colour squares, but in *Deluxe Paint*, with only the sliders, it can be quite difficult. One way to produce the colour you want is to make a spread of four or more shades between the two colours that are closest, then choose the most suitable of these new shades to modify with the sliders. In this way a range of earth tones can be formed from black and orange, or sky blue from pure blue and cyan. Gradually in this way a palette with three or four ranges of colours is built up before you even start painting.

When you create a particularly good palette you might find it useful to save a small brush from the painting with a suitable name – Earth & Trees – Flesh Tones – Sea & Sky, or whatever. Create a 'Palettes' drawer which you can keep permanently at your disposal.

As you produce more paintings and gain greater skill you will build up a whole range of palettes that will save time later. In the meantime, look at the colours used to produce the pictures on the Art Disk that accompanied the program that you use. These can be carried over to your own paintings or used to start new works. Alternatively, before you start your own work try changing the palettes of pictures on the Art Disk. This can be very informative and is the basis of this month's tutorials.

Conclusion

Using the Amiga, some good painting software and the techniques described here we can make a good start on any picture. Nevertheless, to return to dear old Howard Hodgkin, it really is neccessary to take time to contemplate what you are doing.

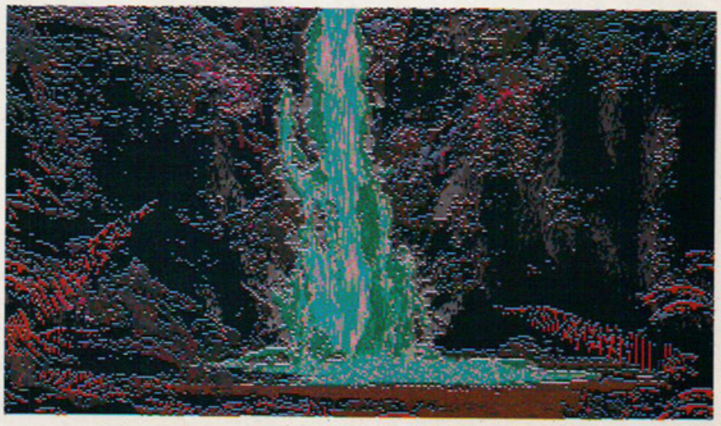
All too much of the artwork produced on computers by amateurs and professionals alike is dross – slick and plastic and meaningless. In many ways this is a product of the medium itself. Its very accessibility and speed mean that many more images can be produced and even quite unskilled people can paint slick-looking objects. This is where we need to be quite selective – don't always go for the bright, smooth look. Let your pictures look rough and 'worked'. Use more of the rich, deep tones and not just the saturated ones – or alternatively try painting with pastel shades, or a mix of the two; that way you will introduce more 'depth' into your work. Contemplate your palette! ■



Waterfall

"Waterfall" (above) is one of the pictures included on the *Deluxe Paint III* Art Disk. It is a beautiful example of computer art, showing a bright waterfall flowing through dark and mysterious undergrowth into a pool. To show the way that the Value slider could be used to change a 'ready-made' picture, "WaterfallLight" (left) was produced. Now the pool and surrounding vegetation is dappled with light and even the moss is glowing in the sunshine. A simple effect but it has to be handled with care and subtlety otherwise it will just look as if you have turned up the brightness knob on the monitor. In this case the foreground leaves were made much brighter green and those in the background together with the moss much less so. The blues in the water were given more Value but the greys of the rocks were left exactly the same. Using the same picture from your disk, or another, try to get the same effect.

In contrast, "WaterfallWierd" (bottom right) shows a much more dramatic transformation after meddling with the Hue slider. Initially, the intention was to produce a moonlit scene, but the red vegetation looked so strange that the effect had to be heightened by making the water green. In this way the mood of a picture can be completely changed with little effort. The trick is not to overdo things!




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Two of the deadliest, Hammerfist and Metalisis were ready for assignment; to dispense death and destruction under the evil instruction of Centro-Holographix.

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digital MASTERCLASS

CARL YOUNG of Photofile, professional digitisers to the crowned heads of Europe, shows how to get the very best from your digitising set-up.

There are two qualities that colour digitisers either do or do not have. The first quality is real-time grabbing: if they are real-time, they can grab still pictures of moving objects, which generally means they must work at about the same frame rate as a video recorder, 50 frames a second. If they are not real-time, they must grab from a static object.

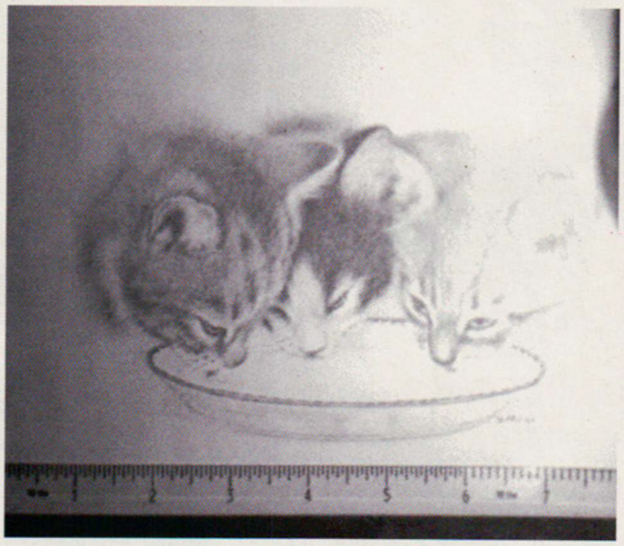
The second quality is full-colour: if they are full-colour, they can read a colour composite signal from a video camera, but if they are not, they must build up a colour image from three separate red, green ad blue images. Now, though the technology involved in a full-colour real-time digitiser is well impressive, the results are not necessarily going to be superior to a good, old-fashioned jobbie possessing neither of these qualities.

So, for the purpose of this feature we'll assume that you've been out to the shops and come home with what I consider to be the best digitiser on the Amiga market – Newtek's Digi-View 4 at around £150. You have also purchased a black-and-white video camera with a composite signal. At Photofile we use a Vidicon camera made by Norbain Imaging, but a Panasonic WV 1410 is ideal at about £220. Right, so what's next?

Before you do anything else, put that stuff down, go back to the shops, take out your whimpering wallet and get yourself one or two more rather important things.

Don't Skimp on Lighting

Firstly, and possibly most importantly, you'll need good lighting. For the best results at least three and preferably four separate light sources should be used. Anglepoise lamps are ideal – they are easily adjustable and can be swung out of the way when not in use. If you can, try to get two sets of two lamps with one set having a wider spread of light than the other.

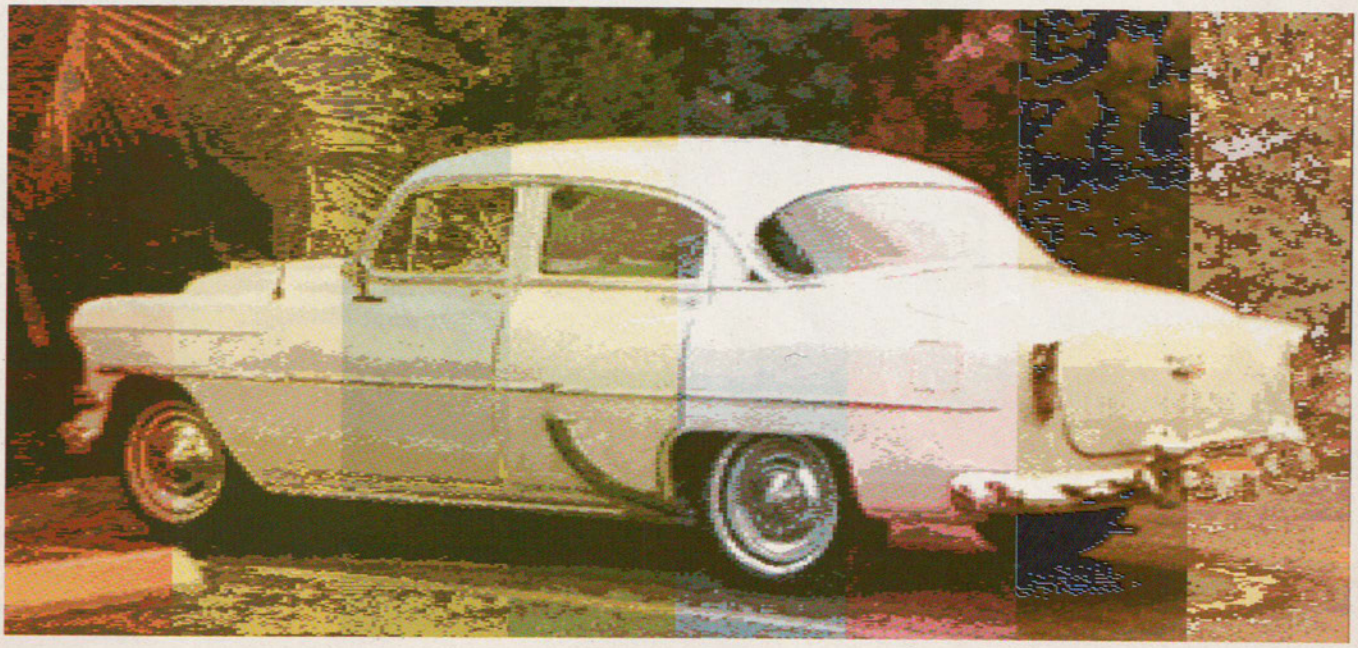


Above: LIGHT FALL-OFF

Sometimes pictures or objects will benefit from different light intensities, but rarely enough to warrant using different bulb wattages.

Next, you need some light bulbs. This may sound like obvious advice but, believe me, light is the key to good digitising. Digitisers pick up and exaggerate gradations of light intensity which you wouldn't notice on your original picture, but which become clearly visible on your digitised image. (See the picture on the left called "Light Fall-off"). What's more, normal household light bulbs actually give off yellow light, so when digitising large white or very light areas, shades of white tend to become shades of pale yellow!

Fortunately, there are ways around these problems. The first is to



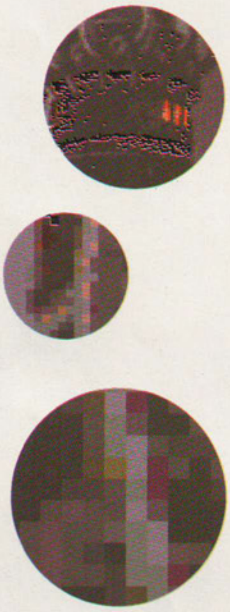


use the sort of anglepoise lamp which takes small fluorescent tube lights. These give a much more even spread of light. However, you might have to pay up to £20 each for these tubes!

There is another alternative, one which we favour at Photofile. We use special light bulbs that simulate daylight. They're the sort used by artists when natural light fades and their advantage is that they show true colour. That is, they are fitted with a special colour correcting tinted glass that acts as a filter emitting an enhanced spectrum. The only problem is that these bulbs come from France and don't seem to be widely available here.

We tracked down a supplier in Loughborough called Spencely Barker who import these wonderful things and sell them to us for about £4.00 each. Spencely Barker supply bulbs by mail order: you can contact them on (0509) 231945. Ideally, use 75 watt bulbs: don't go for bulbs of over 100 watts or you'll have the corners of your pictures curling up from the heat! A piece of glass placed over the picture will stop this, but may cause you problems with reflections from the lights and camera.

Above: HALO EFFECT



Below: 3D

A Steady Hand

When digitising you must keep your camera absolutely steady for up to five minutes at a time, so it's no use balancing it, teetering, on top of a pile of books! Copy stands are handy but very expensive and illuminated ones even more so. You can pay anything up to £500 or more for a top-of-the-range, four light-point model.

A cheaper and in many ways better alternative is to get yourself a tripod. You should be able to pick up a decent one for well under £50. Make sure it has a pan-and-tilt head for easy adjustment and can be pointed directly downwards at a subject. Tripods also have the advantage of being portable, unlike huge and unwieldy copy stands.

Digi-View 4 and other digitisers of this genre utilise a coloured wheel comprising of a red, green and blue filter. The wheel is manually rotated during the digitising process and one shot of the subject is taken through each of the coloured filters. The digitiser's own software then very cleverly combines the three shots to produce a full colour picture from a black and white camera. A problem can arise here when manually rotating the filter wheel. If the camera or target image is accidentally jarred and moved even a millimeter, then the target will be displayed with a red, green or blue halo around it and you will have to start the whole process again! (See the picture of the halo effect above, called "Halo Effect).

A simple but expensive way round this problem is to get yourself an RGB splitter such as the Print Technik model, available from HB Marketing for £99 plus VAT. The splitter device is simply inserted in the cable line between the camera and computer and eliminates the need for a filter wheel altogether by doing its job for it electronically. Another advantage of the splitter is that with it you can digitise colour pictures from a video (provided the video has a good still frame).

Another option, which is open to Digiview users only, is to use a Digi-Droid. At around £60 this little chap connects to your joystick port and, via a long lead, turns a motorised filter wheel which is attached to your video camera. When told to do its stuff, the droid will scan red, move the filter wheel round and repeat the process for the other two colours while you put the kettle on. Not only does this save time, it also removes any chance of you jarring the set-up.

If the floor is not completely steady even the vibrations caused by someone walking near the active digitiser can be enough to cause the halo effect, so try to choose a solid floor for your new studio. Check the firmness of your floor by placing a glass of water on your digitising table, then walk around the room watching for ripples. You can actually make use of the "halo technique" to create an interesting effect. Try digitising a small object through the red filter, move the object slightly and digitise it through the green filter. You will have created a 3D image suitable for viewing through 3D glasses. (Again, see the picture below called "3D").

Less is More

The easiest subjects to digitise are photographs and the smaller the piccie the better. The smaller the area to be digitised the closer the camera can be positioned to the target and



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the more detail can be captured. Also the possibility of uneven lighting is quite simply minimised.

When digitising rectangular pictures, such as photographs, it's often better to move the camera closer to the target and crop the picture horizontally or vertically to eliminate borders. If you have to leave a border around the picture and the backdrop is going to be exposed, there is an important point to remember and one which will make a lot of difference to the result. If you're digitising a picture that uses a lot of greens, make sure your backdrop is green, for oranges use orange and so on.

This is because the digitiser, in anything but HAM mode, is using a very limited number of colours and will use the most prominent ones. If you use, say, an orange backdrop behind a picture with no orange in it, you are wasting colours which could have given your picture more detail. You may even find that some of the lesser-used colours in your picture have been changed to that of the backdrop. (A startling example of this is shown by the pictures "Backdrop Right and Backdrop Wrong").

Green for Envy

When digitising high-contrast monochrome pictures you will find that light grey detail is lost in areas of bright white. Adjusting the contrast and brightness control will help, but it's a fiddly job and you may find that the white area has to be darkened too much before the grey detail is plainly visible. A much better result will be obtained by digitising the picture at a brightness slightly greater than you would normally use, but through the green filter on your colour wheel. The green filter picks up the grey detail well and darkens the bright areas slightly. Try it, it really works. (Again, see the samples on this page, "Cat Clear and Cat Green").

Hold to Slide

Slides can also be digitised, but frankly it's hard work. Cine-to-video transfer devices such as those which back-project a slide onto a screen, via a half-mirror, won't work. This is because, though you won't be able to see it beforehand, your image once digitised will appear extremely bright in the centre, darkening steadily to the outer edges. The same problem will occur if you digitise from a slide viewer. Pictures obtained simply by digitising an image projected onto a screen produce terrible results.

If you really need to digitise slides you will have to replace the lens on your video camera (probably 8 or 16mm) with a 25mm lens (£50 up). This will produce an undistorted picture from a 35mm x 24mm slide. You will also need something to hold the slide while it's digitised. The type of slide copier that attaches to the end of a camera lens is excellent but, unfortunately, no good for colour shots because there is nowhere for the coloured filter wheel to be fixed between the lens and the slide.

Of course, if you have an RGB splitter, you're laughing because you don't need a filter wheel and a standard slide copier is all the equipment you need to buy. If you're not that fortunate you must use your ingenuity to construct something to hold the slide. A 25mm lens should give you a distance of about three inches between lens and slide, leaving plenty of room for the filter wheel. You will need to place a piece of light-diffusing glass (available from any photographic shop) between the slide and your light source. Your slide projector uses a halogen bulb and is an ideal light source. Try to avoid projecting the light from a projector directly into your eyes. If you do, your poor old peepers will probably fall out!

Of course, if you can't afford a digitising set-up of your own or you only need the occasional picture, Carl and the chaps at Photofile are happy to digitise your pictures for you. You can find details of their digitising service in their advertisements.

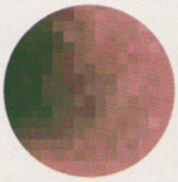
Meanwhile, now that you know how to digitise well, look out for Brian Larkman's forthcoming tutorial in which he will explain how to use, improve and generally play about with your digitised images to best effect. ■





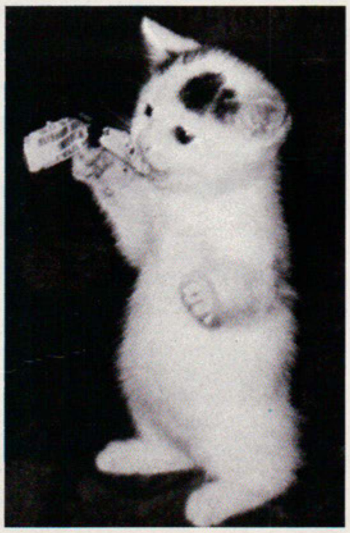
Top: BACKDROP RIGHT

Left: BACKDROP WRONG









Far Left: CAT CLEAR

Near Left: CAT GREEN



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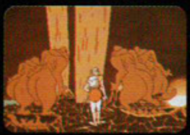

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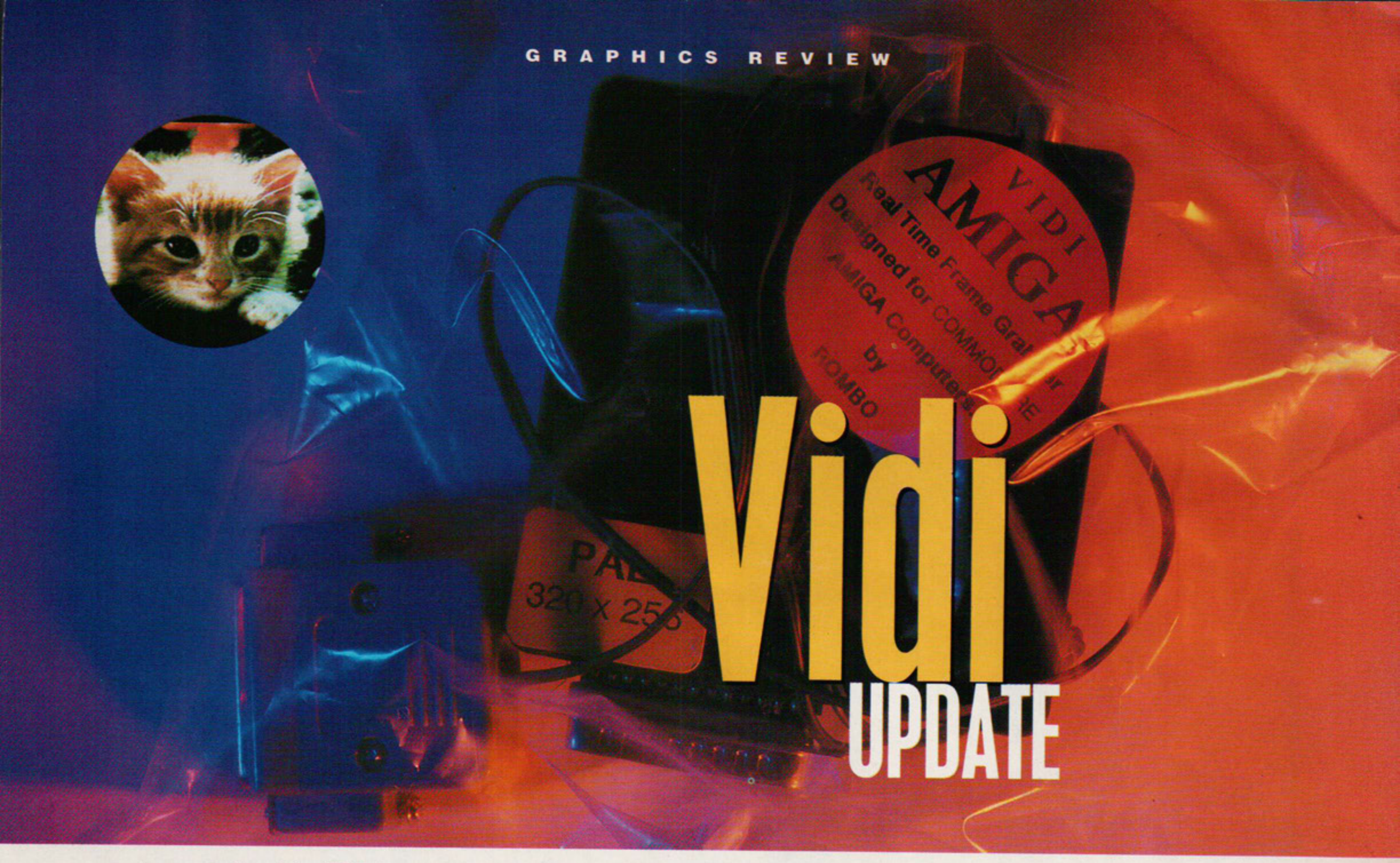


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Vidi UPDATE

JASON HOLBORN takes a look at Rombo's latest upgrade for their highly successful Amiga videodigitiser, VIDI-Amiga.

ABOVE, MAIN PIC: The VIDI hardware is a small, harmless-looking piece of kit.

Since our review of the VIDI-Amiga video digitiser in Issue 3 of *Amiga Format,* Rombo have been hard at work producing upgrades to what was even then an excellent product. The first of these upgrades to arrive comes in the form of *VIDI-Chrome,* a software-based package that promises to bring colour to your digitised artwork.

VIDI Overview

The original VIDI was a mono affair that could only grab images in NTSC resolution with 16 grey-scales. Since then the VIDI hardware has been upgraded to support a much more useable PAL-resolution screen. Other changes to the VIDI hardware include the change of power supply source; the original VIDI drew its power from the joystick port, but the new VIDI has now been updated to draw power from the external disk-drive port. According to Rombo, this change was neccessary because some Amigas (mostly newer models) are unable to supply the extra 50mA required to power VIDI.

With the arrival of *VIDI-Chrome,* your mono VIDI digitiser can now grab images in marvellous technicolour. The VIDI-Chrome package consists of a single program disk containing the *VIDI-Chrome* software, a couple of demo pictures, a brief manual (or should that be pamphlet?) and a set of three colour filters.

As you have probably already guessed, *VIDI-Chrome* employs the famous system of red, green and blue filters to grab separations of the same image. These separations are then combined to produce the resulting image. Thanks to VIDI's impressive speed of operation, this usually tedious process is made considerably less tedious.

Colour Control

If you buy VIDI Amiga as a complete system comprising of the VIDI hardware and *VIDI-Chrome* software, you actually get two separate versions of the grabbing software. The first, which is bundled with the VIDI hardware, grabs images in 16 grey-scales and the second (which arrives in a separate package) handles colour grabbing.

Grabbing a colour image with *VIDI-Chrome* is simplicity itself. Just like Digi-View, red, green or blue separations may be grabbed simply by choosing the appropriate menu option. However, unlike Digi-View, VIDI





The images on this page and overleaf are all produced by *VIDI-Chrome:* some here at *Amiga Format,* others by Rombo.



continuously grabs frames until you click the mouse button to stop, therefore allowing you to alter the brightness and contrast of the incoming signal to produce the best possible separation. Once you've grabbed all three separations, clicking on the 'Display HAM' menu option will combine the three separations into the final image.



The digitising process is made considerably simpler with the inclusion of a 'Grab HAM' option which allows you to grab all three separations from a single menu option. Click on Grab HAM and VIDI starts to grab



red frames – once you're happy with the separation being displayed, click the mouse button and VIDI then starts to grab green frames – click on the mouse again and VIDI starts to grab the blue frames. A final click of the mouse button ends the digitising process and the final image is produced.



On the whole, the HAM images that VIDI produces are of high quality. However, VIDI images do seem to suffer from HAM fringing, something that the original Digi-View suffered from. With the additional purchase of an image processing package such as Progressive's *PIXmate*, this can be reduced. Although the captured images aren't up to par with those produced by NewTek's digitiser, the trade-off in quality is compensated for by its fast operation – being able to adjust the brightness and contrast of the digitised image while the digitiser continually grabs frames



in real time can be a real time-saver. With NewTek's unit, you could never quite be sure if the image you were grabbing was precisely what you required – if you wanted to adjust either the brightness or contrast of the incoming signal, the only practical way of doing this was to feed the video signal into the back of your monitor and use your monitor's CVBS switch to display the signal directly from its source.

Conclusion

VIDI-Amiga is ideally suited to the home user who owns a single drive



Amiga 500 with a half megabyte of RAM and wishes to grab images from their home video recorder. While the basic mono VIDI will happily grab images from a video recorder, don't think for one minute that VIDI will grab colour images from that same video recorder – you'll need to buy a RGB splitter (£100) before you can even start thinking about such things (the same is also true of Digi-View). If do you wish to use the extra facilities available within the *VIDI-Chrome* package to grab colour images, you're going to need to purchase a mono video camera.

Due to the nature of the A/D converter used by VIDI, the images that it produces can never hope to compare to those produced by Digi-View, although they do get close! However, Digi-View has the disadvantage of being somewhat unusable without at least a megabyte of RAM (even then, you still won't be able to use NewTek's new Dynamic screen modes as seen in the latest release of Digi-View!) Even though Digi-View can be used in conjunction with a video recorder, images of acceptable quality aren't really obtainable without the addition of a monochrome camera such as the Hitachi MV-720K.

Digi-View has the added advantage of being able to grab images in just about every resolution under the sun. If you can name a combination of colours and resolution, chances are that Digi-View can grab an image for you in that format; 2, 16, 32, 4096 or even 22 million colours (for output to a video frame buffer), Digi-View can



handle the lot! VIDI images are unfortunately limited to low resolution only.

If your primary reason for purchasing a video digitiser is to grab images in full colour, then there is still only one real choice for under £150 – Digi-View. NewTek have managed to refine their product to such a high degree that it has become almost unbeatable.

Although Digi-View is slow (unbearably so, at times!) the images that it produces cannot be touched (even JCL's SuperPic and Marcam's FrameGrabber cannot produce images of such quality). If, on the other hand, you need to be able to grab mono images from any composite video source and will occasionally want to grab colour images using a video camera, then VIDI Amiga is well worth considering.

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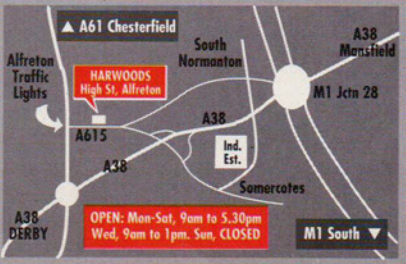
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WIPE-OUT





- the story so far

- The World's first Intergalactic Hoverboard Challenge.
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- Over 1,100 stars - each with its own local league, and prizes.
- More than 77,340 possible opponents - each with its own individual characteristics.
- Form your own Interplanetary League
- Great rocking music - neck breaking speed!
- Can you survive the Death or Glory chicken-run challenge? Can you handle the Futon Flip?
- Qualify for the once-in-a-millenium All Time Greats Tournament.
- Have you slimed an Ameboid today?

There really is no feeling quite like turbo-boosting past your hapless opponent, hanging a wickedly fast 180 degree turn and sliming across his path before he's realised what's happening. Be warned - WIPE OUT may be the only game you'll want to play for some time.

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OUR ACE REVIEWS SECTION IS THE ONE TO READ

SCREEN PLAY



THE RATINGS EXPLAINED

GRAPHICS
Good graphics are an important part of any game: if the power is there, it should be used to the full. Both static and moving graphics come under scrutiny in this rating, but remember, graphic wonders alone do not a great game make...

SOUND
With stereo capabilities the last thing you want to hear are Spectrumesque beeps, right? Title tunes and effects all add to the atmosphere of a game and good sound can greatly increase your enjoyment.

INTELLECT
How much real thought do you have to put in to play the game? Just because a game is mindless doesn't necessarily mean it's bad, but a game with a high intellect rating says immediately that you'll need to think to gain maximum enjoyment.

ADDICTION
How easy is a game to pick up and play? How much sheer fun will you get from it? Will you keep coming back? Important questions, all answered by a quick look at the Addiction rating.

OVERALL
A percentage mark that takes into account all the ratings, plus extras like lasting interest, documentation and packaging.

THE TEAM
There are two main *Amiga Format* reviewers: Andy Smith is an ex Spectrum owner who's been playing computer games for many years now and writing about them for almost as long, cutting his teeth on *ACE* before moving onto *Amiga Format*. Andy likes any type of game, from shoot-em-up to strategy game, from adventure to arcade conversion.

Maff Evans joined *AF* after doing sterling service for *Zzap! 64*, and he splits his time between playing games and writing reviews for us and our sister magazine *ST Format*. He's another solid all-rounder who's not averse to giving Andy Smith the odd high score contest on the month's best games.

ISLANDS IN THE SUN

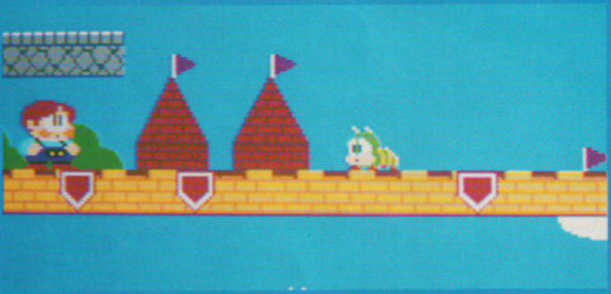


Jumping into exploding stars is effectively the same as a smart bomb: a great way of killing off those really annoying spiders.

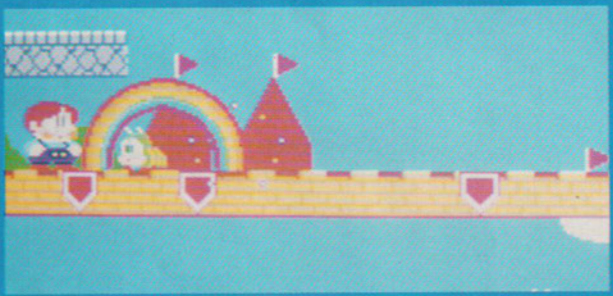
RAINBOW

OCEAN £24.99 ■ Joystick

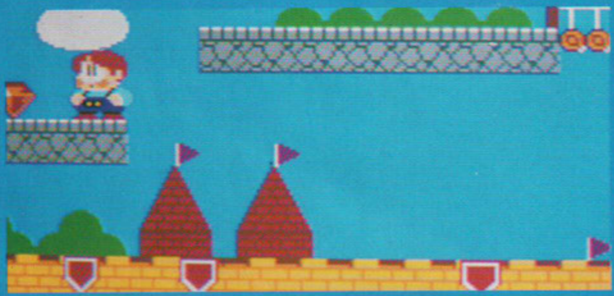
A GEM OF A WEAPON



The start of the game, and a nasty heads towards our hero...



...trap it with a rainbow and...



...jump on the rainbow to turn it into a nice gem.

After much confusion and uncertainty, this fantastic conversion of the Taito coin-op has finally arrived on the Ocean label.

The stars of this one or two player game are two characters called Bub and Bob (no relation) who you may remember from their earlier adventures in a Firebird game called *Bubble Bobble*. They were turned into bubble-blowing brontosauri by the evil Boss of Shadow and only after much struggling did they regain human form. It was then they decided to get away from it all, to live in peace and tranquillity on an archipelago known as The Rainbow Islands.

Unfortunately, the Boss of Shadow found their hideout. With the help of his minions he has rounded up all the inhabitants of the islands and is holding them prisoner. Naturally, only Bub and Bob can rescue them.

There are seven islands in all (one for each colour of the rainbow) and each island is made up of four stages with an end-of-level guardian sitting at the top of the last stage. It's a vertically-scrolling platform game in which you guide your character to the top of each level. Of course it's not that easy as the BoS has loads of his minions running and flying around and contact with any of these causes you to lose one of your four lives.

To combat the baddies you're armed with – guess what? – rainbows. Hitting a baddie with a rainbow causes it to turn into a juicy lump of fruit or cream cake or flower or something of that ilk and collecting the goodies (no relation) scores you points. There's an added advantage in that every third baddie killed turns into a magical item – such as running shoes to speed up your character, or potion bottles which increase the speed and reach of your rainbows (first doubles then triples). Then there are other random items which give you a small fairy drone, and, if you're really lucky, ones that bring huge bags of points flooding from top of screen.

As well as being a weapon, your rainbows are also extremely useful as bridges, so you can shoot them out and walk across them to reach other platforms. There is a problem with the rainbows though – you can't jump onto them and they disappear after a while.

Then there are the diamonds. Occasionally a killed baddie will turn into a coloured diamond which you can collect for extra points (pick them up in the right order and secret rooms are revealed at the end of the island).

Run, jump and work your way up the screen – but don't take too long or the baddies turn red and angry and speed up. If you're really tardy, water rises from the bottom of the screen to drown you when it covers your head.

GRAPHICS	8
SOUND	6
INTELLECT	3
ADDICTION	9
OVERALL	95%

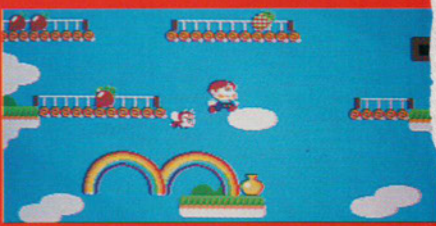
FROM THE START OF COMBAT ISLAND...



The second island and our hero has found a magic item that gives him the power of flight.

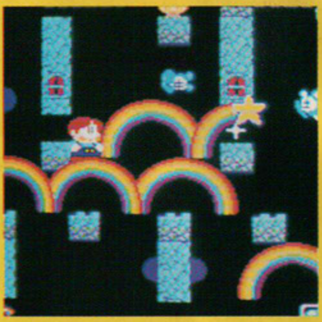


As well as acting as a weapon, these rainbow things are jolly handy for building platforms.



Fleeing a flying nasty. Collect the yellow bottle to speed up your rainbows' firing.

ISLANDS



The third island, and here's a rainbow in killing action.

INGENIOUS DEVILS

The Japanese really have turned coin-op games designing into an art form and they are so devious at it! Remember *Space Invaders*, in which you had to hit the spaceship exactly on every 22nd shot so that you could get a guaranteed bonus of 300 points?

Well, the intricacies of game design have come a long way since those early days, but the Japanese designers are still just as devious. Recently, games like *Super Mario Bros* and *New Zealand Story* have been full of little extras for the player to discover – and *Rainbow Islands* is no exception.

There are warps to find, secret rooms, extra bonuses and a whole heap of sub-games to play once you really get stuck into it. Should you manage to complete the game you can then spend months trying to find all the weird and wonderful tricks that are there: but naturally you're not given any clues to how you can find them.

Just to get you started off, though, here's a little hint. Try collecting all the diamonds in the order of the colours of the rainbow – starting with red, then orange, and so on all the way to violet. Do this all on one world and you can get to the secret room.

Remember, you can determine which colour a diamond will be by killing a baddie on a certain part of the screen, i.e. kill a baddie on the far left of the screen and it'll produce a red diamond – kill one on the far right and it'll produce a violet one. All the other colours are in between the two. ***Andy Smith***

GRAPHICS AND SOUND

As you'd expect, the graphics are very cute – all the nasties look harmless enough until you run into them. They're also very bright and colourful and everything has been well drawn and animated. The jaunty soundtrack is great and the occasional effects are fine. A great cutesy game that's an audio visual treat.



Every third baddie killed turns into a magic item – faster boots, here.

LASTING INTEREST

It's tough, so it will take you ages to play through the seven islands, but practice really does make perfect and once you learn where the baddies are coming from you'll be prepared for them. You'll be playing this for hours at a time and whenever you can.



Collect that bottle to gain further-reaching rainbows...

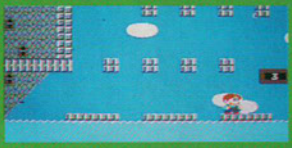
JUDGEMENT

What a cracking game! It's supremely addictive, completely playable and thoroughly enjoyable. This is a classic game from the Super Mario Bros school of games design that will have you glued to the monitor for a very long time. There's just so much in the game it's a credit to whoever designed the coin-op, and the conversion is superb. For some light relief and solid fun you'd be a fool to pass this by.

SECRETS!



Collect all the diamonds in the right order (left to right) and this happens. Why...?



Near the end of the first island and unfortunately time is running out very quickly!



The end-of-level guardian. What's that door in the middle of the picture there for?

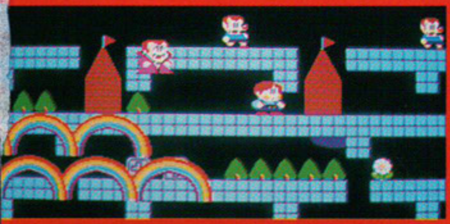


Kill off the spider and collect all the treasure, then go through the door to find...

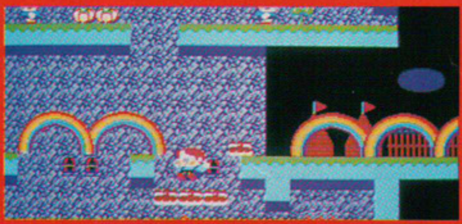


A secret room with loads more treasure!

...TO THE END OF MONSTER ISLAND



Those pink Dracs can be a real pain.



Another magical item turns all your rainbows into goodies whenever you jump on them.



Dracula is the third end-of-level guardian. Believe us, he's one tough cookie to beat!


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The doorman, a police plant, photographed suspects as they arrived.

HEREWITH THE CLUES

CRL £24.95 ■ Mouse

Here is a game that is out of the ordinary. It's a murder mystery based on a package presented by Dennis 'The Devil Rides Out' Wheatley. The idea of the pack is that you get a load of photographs, pieces of evidence, letters and other bumpf and have to solve a murder – and once you reckon you know who did it, you open a sealed envelope and see if you've got the solution right.

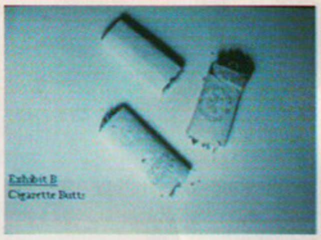
So how do you play this on a computer? Well, what CRL have done is digitise all the info from the pack and the player accesses the info by clicking on various parts of the screen which shows all the stuff laid out on a table.

The plot, then. You are the Assistant Commissioner of the anti-terrorist squad in pre-war London. A murder has just been committed in a nightclub. This proves to be messier than it at first sounds: the anti-terrorist squad has been watching the premises for a while because some known IRA sympathisers have been using the club, which has a secret room at the rear, for their meetings.

The murdered man is one Serge Orloff, owner of the club, who's also in with the gang of 16 subversives. The problem was, Serge had been helping the police with their inquiries because he was afraid of being deported back to Russia for other crimes.

After reading the reports from your assistant, who believes the murder was committed by a member of the group, you're left with two things to do. Firstly, identify the murderer and secondly, discover which members of the group were in the secret room at the time of the murder. The second part of the task is necessary because explosives and so on were found in the secret room: so they can then be charged with 'conspiracy and complicity in the manufacture of infernal machines for felonious purposes'.

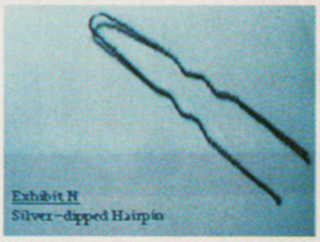
Once that's done, you'll have to get in touch with CRL who'll enter you into a competition and reveal the solution. ***Andy Smith***



More evidence, which was found in the secret room.

LASTING INTEREST

You can really get your teeth into this. It's going to take you a while to correlate all the clues and come up with the answer so prepare yourself for some pretty heavy sleuthing.



Another photo of evidence in the case: harmless enough??



A shell recovered from the hallway where Orloff was shot.

GRAPHICS AND SOUND

There are a few spot sound effects, which comes as a bit of a surprise. The digitised pictures are fine although a couple are a bit dark. Looks just as good as it needs to look.

JUDGEMENT

Be prepared to put some work in and you'll have loads of fun – to save on disk – swapping a second drive is a real bonus. Well put together, a great mystery to solve and something a bit out of the ordinary: well done, CRL!

GRAPHICS	6
SOUND	5
INTELLECT	7
ADDICTION	7
OVERALL	80%

PARIS-DAKAR

TOMAHAWK £24.99 ■ Joystick

The start of the race – keep between the stones and go as fast as possible.



French house Coktel Vision are certainly milking the Paris-Dakar licence: they released a game last year called *African Raiders* that was based on the famous race, and now they present another one.

There are three skill levels to this driving game in which all the action is viewed from the cockpit. That means you can choose between three cars that have increasingly better performance and increasingly worse handling. It's a six stage game in which you have to finish each stage in the fastest possible time. Normally the route you should take is marked out with small stones. However, stages two and four are across country, so you just head in the general direction of the finish and try not to bump into too many boulders or other big, solid obstacles along the way.

As a driving game it's not the best to have appeared and with only six stages it's not going to take long to complete: then you're just left with trying to improve your times. Far too shallow and lacking in gameplay to merit much attention. *Andy Smith*

GRAPHICS 7 / SOUND 5 / INTELLECT 2 / ADDICTION 5 / OVERALL 37%



"You WILL go and be a hero... NOW!"



Oh dear! Doesn't look too happy, does he?

TYPHOON THOMPSON

BRODERBUND/DOMARK £24.99

■ Mouse and Keyboard

The year is 2124 and men have boldly gone where no man has gone before, out into the far reaches of space. Even passenger craft make trips to distant galaxies. But it pays not to be too blasé about space travel where the ocean planet of Aguar, in the Omega sector, is concerned.

Aguar was the last known location of Inter-galactic Flight 396, which left a faint signal as hope of survivors. Many trips have been made to Aguar to find the survivors, but all have been destroyed by the mischievous and deadly sea-sprites. Those that managed any communication told of a single child held prisoner by the sprites and of the strange spirit guardians that tried to help them rescue the child (without much success).

You play Typhoon Thompson (no relation), a reluctant hero who has been tricked into attempting a rescue. Riding a small Jet-Sled and armed initially with a laser cannon, you must tempt the sprite flyers out of their islands, blast them and pick them out of the water before they can swim back to safety. Once all the sprites have been caught you can hold them hostage until the head sprite of the village gives up one of the four artifacts you need to rescue the baby. Returning the artifacts to the spirits gives you another weapon to help you defeat the sprites, such as scatter bombs, sprite magnets or freeze-bombs.

Once you have all four artifacts, you can take on the sprite-flyers of the last village before freeing the child. ***Maff Evans***

GRAPHICS AND SOUND

Despite their diminutive appearance the graphics are full of character and humour. Every object and action in the game has such realistic animation, as well as a few additional touches to add a little extra polish.

The start sequences and end-of-level scenes are extremely funny, especially if your sense of humour is a bit on the silly side! The 3D motion and scrolling is also excellent, both smooth and effective, giving a true feeling of skipping over the sea's surface. The sound consists of a few warbling ditties and pings which, while fitting the game very well, won't exactly set the Amiga music enthusiast's pulse racing.

LASTING INTEREST

Every time you play the game the animation sequences are altered, so that it's like watching an ever-changing slapstick cartoon. Once the novelty of the cute animation has worn off, you find a thoroughly playable action game which screams out for more than its fair share of attention. The game is a little easy to complete after practice, but it's such a joy to play that you'll be unable to tear yourself away from the machine until you do!



A single flyer causes problems on Level One.

JUDGEMENT

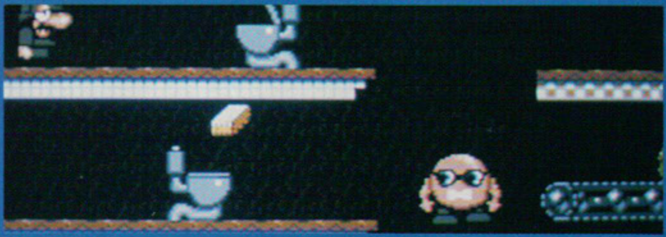
Typhoon Thompson is one of a rare breed – an original and playable arcade game. The game has more feel and atmosphere than many current coin-ops and film tie-ins – mainly because it's written with humour and entertainment in mind, rather than just trying to get you to put another 10p piece in the slot. If you'd like a change and have a fun sense of humour, then give *Typhoon Thompson* a 'spin'.

GRAPHICS	7
SOUND	4
INTELLECT	3
ADDICTION	7
OVERALL	80%

MANIC MINER

SOFTWARE PROJECTS £9.99

■ Joystick



Time waits for no man, and neither does the toilet.

One day the poor but happy Miner Willy discovered a long-lost mine under his back garden. With pound signs in his eyes, he ventured into the mines to see what treasures he could find. Unfortunately he took a wrong turn: now he has to collect enough objects to make the trip worthwhile and negotiate the twenty treacherous caverns that lie between him and safety. The caverns are inhabited by automated creatures that have long since given up their tasks and march up and down in long worn tracks. Miner Willy must avoid these creatures otherwise it's off to the big coal-face in the sky!

The Amiga version of *Manic Miner* features a direct clone (!) of the original 8-bit game along with a 16-bit upgrade. The upgrade features scrolling screens and colourful animated sprites in place of the single-screen single-colour originals. Unfortunately the scrolling means that you have to be pretty *au fait* with the original to get anywhere, since you can't see what's coming or plan your routes acordingly.

Timing is the essence of the game, but as the superd-up version's sprites trundle out of view frequently it gives the mining novice quite a challenge to get this right. Fans of the original are in for a disappointment: the feel has been warped to extremes. The timings are off, the methods barely work and the conveyor belts don't act as in the original, so that screens like 'Miner Willy Meets the Kong Beast' are now virtually impossible.

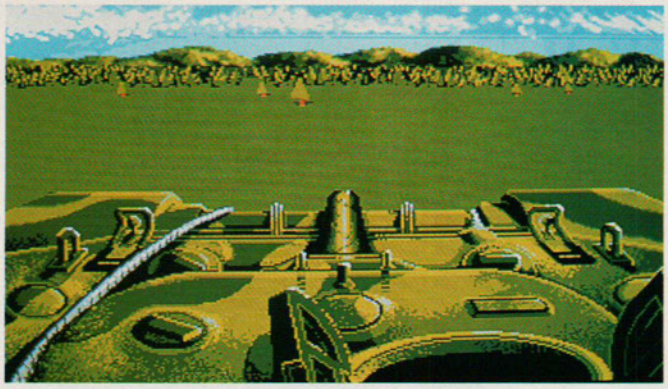
It would have been nice to play *Manic Miner* again just for a bit of nostalgia, but this version has none of the spark that made the original fun. ***Maff Evans***

GRAPHICS 5 / SOUND 3 / INTELLECT 5 / ADDICTION 2 / OVERALL 25%


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The route will lead him through Pawnee territory, the most fearsome of Indian tribes, across hostile wolf-infested land... and means he must shoot the terrifying white-water rapids of the Colorado in a flimsy Buffalo-hide canoe.
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Programmed by: Teque Software developments Ltd. Atari ST Screenshots



Moving out from base camp.

SHERMAN M4

LORICIELS £19.99 ■

Joystick and Mouse

The American Sherman tank and all its variants did sterling service for the allies during World War II, so for all those of you who've dreamt of getting to grips with one of the ugly brutes, here's your chance.

It's a one player game containing three scenarios based on actual battles and campaigns in which Shermans played an important part. The first is The Normandy Landings, in which the Sherman is in an aggressive role: five single scenarios can be played individually in any order or all five can be played one after the other to form a sort of campaign game. The other scenarios are The Ardennes, where Hitler launched a massive tank offensive, so your role is far more defensive; and North Africa, where things are much more strategic.

Once you've decided which to play, you can alter the game's parameters to suit; that is, alter the enemy's difficulty levels and so on. Do all that and you then get your instructions from the Sarge before setting off.

Playing the game involves managing four tanks and achieving the specified objective. The first Normandy mission requires you to knock out a couple of enemy bunkers and then take control of an enemy camp. A map of the location is provided – giving orders to the tanks is simplicity itself. Simply select the destination and the tank goes trundling towards it – once all four are away you can jump into the command seat of any one of them simply by pressing a key. Then you can take control if you wish and fight the enemy yourself or just sit and watch. The autopilot can be switched back on just as easily.

Remember when playing the campaign game that you only have four tanks with which to complete the game and once one tank is out of action, it's out of action for good. That's not a problem if you play the scenarios one after the other however, because you're given four at the start of each regardless of how well you did in the last scenario. ***Andy Smith***

GRAPHICS AND SOUND

The graphics really are very good – very fast filled 3D with options for other views as well as the usual driver's eye view. The sound isn't so hot, but it's adequate. Fast and well animated – a good looker.

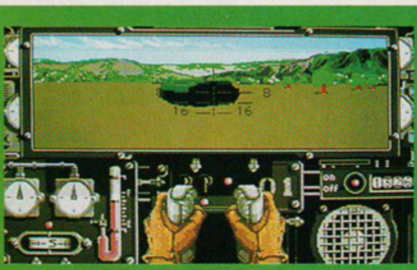
LASTING INTEREST

With 15 missions and the ability to 'limit set' yourself by bumping up the enemy's difficulty ratings, prepare yourself for some long playing sessions. You don't have to play for hours on end, though, because some of the scenarios can be played quickly.

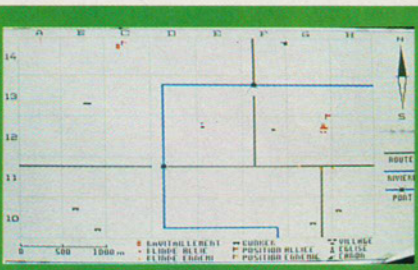
JUDGEMENT

It's not going to have seasoned strategists running out to the shops because it's too limited in the strategy department and is a bit too close to a *3D Battlezone*. Arcade fans who like to think occasionally will be pleased with it. Good fun.

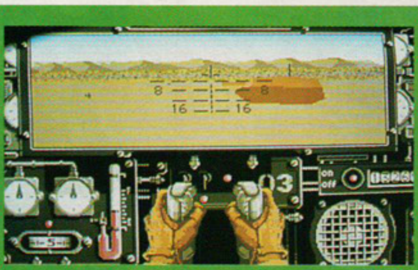
GRAPHICS	8
SOUND	6
INTELLECT	6
ADDICTION	7
OVERALL	77%



The usual driver's view. That's one of your knocked-out tanks up ahead.



The map at the start of a scenario. You're in G12 and must take the camp in C14.



A close-up of a Jagdpanzer (this is about as close as you want to get to it!)

HIGHWAY PATROL

INFOGRAMES £19.99 ■

Joystick

Aaargh! Turn right! Turn right!



Criminals are tough to catch in a high-speed car, even through the leafy lanes of sleepy England, just imagine the work the Americans have to do in deserted places like Arizona where the roads are long and straight and go on for ever. Reckon you could fare better than the average cop? Well, now's your chance to find out.

Highway Patrol II (who knows what happened to *HP I*?) plonks you firmly in the open spaces of one such American state. Your desk is full of 'Wanted' sheets, so select who you would like to go after and jump in your car.

At the top of the screen the map coordinates of the crims and yourself are displayed. Drive as fast as you can towards the criminals, remembering to fill up with petrol if necessary along the way, and once you've caught up with them convince them to pull over so you can book 'em.

It looks fine but most of the time it's just a case of steering left-right , which becomes very boring after a while. Far too little to do to keep you very interested. *Andy Smith*

GRAPHICS 8 / SOUND 4 / INTELLECT 2 / ADDICTION 5/ OVERALL 48%



A '57 fighter pilot's day starts with a read of the orders.



Load up with some weapons and you're almost ready to go.



Then it's time for another mission.

WARHEAD

ACTIVISION £24.99 ■

Mouse

The Future. Earth has suffered a severe attack from a group of insect-like aliens from the nearby star system Sirius. Reasons for the attack are totally unknown. The resulting nuclear winter has caused terrible suffering and so the remaining peoples of the Earth have banded together in self-defence to form the Fist Of Earth World Government.

The alien enemy was more technologically advanced than were we, so work had to be started quickly and now, at last, Earth has an answer: the FOE-57 attack spacecraft.

A space station called Solbase has been set up in the Sun's orbit and will be your home for the next few months as you help the Fist Of Earth defend the motherland from these six-legged aggressors.

A typical day in the life of a '57 fighter pilot starts with the reading of the day's orders. The first couple of missions are designed to get you used to flying the ship and to practice docking. With that under your belt you're ready to take on proper missions, which usually involve 'Quad Jumping', a sort of hyperspace travel, to a different star system and then flying around using standard motors.

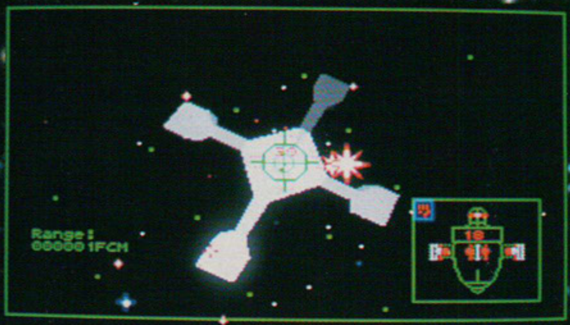
You view all the action through the ship's front window. To start with, flying around is very confusing – especially at high speeds. Fortunately there are a number of automatic pilots to help you (though things still look very con-



Call up the star system and planet you wish to travel to and lock the navigation computer on. Launch from the base and you're only a Quad Jump away from your destination.



...the automatic docking computer takes over.



Line yourself up with the centre of Solbase and when you're close enough...



Once the fun's over it's time to dock again



And there he goes! Dead!



In your ship in Solbase: PWS means Proceed With Sortie.


Launch yourself away from the base...

GRAPHICS AND SOUND

There's a very atmospheric intro soundtrack and the in-game effects are great too. The filled 3D used throughout is well done and everything moves swiftly and smoothly. All the information screens (star systems, planet orbits and so on) are also very good. The overall impression of *Warhead* is that it's a highly polished game which, though it doesn't rely on the graphics, has nevertheless been well designed with obvious attention to detail.

LASTING INTEREST

None of the missions take hours to complete, but some do take a while and you'll be lucky to finish them all first time. More missions would be nice, but the ones there are will not disappoint.

JUDGEMENT

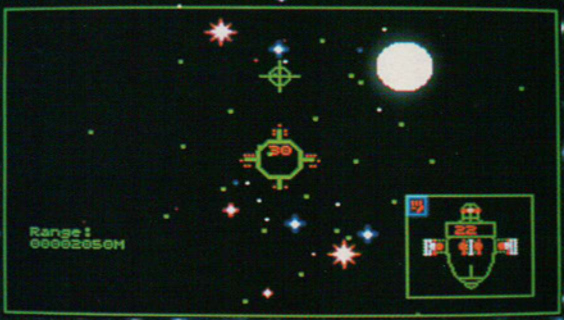
Imagine all the special missions taken out of *Elite* and plonked into one game, and that will give you some idea of what *Warhead's* all about. Each mission isn't as deep and won't take as long to complete as an *Elite* mission, but the number makes up for that. A great game: not brilliant but near enough to merit a good look.

fused at times!), and these include auto pilots that lock on to your primary target (which doesn't have to be the enemy) and ones that point you in the direction of travel – this may sound silly, but the laws of physics apply in space and you may not always be going in the direction you thought you were. There are also artificial head-up displays just to prove you're moving and weapon status displays.

The missions range in complexity from simple patrols to runs after smugglers and encounters with fleets of the enemy. It's not long into the game, though, that you meet one of the nastiest creations ever to wander the galaxy: The Berzerker, an alien ship that seems to hate all organic life, your enemies and yourself alike. Dealing with him takes some fine flying and devious thinking but he can be destroyed, and you'll have to discover just how it's done for yourself. A '57 pilot's lot is not a happy one, but it sure is exciting.

Andy Smith

GRAPHICS	8
SOUND	7
INTELLECT	6
ADDICTION	8
OVERALL	88%


...and switch on your HUD which gives you an indication of motion in the vastness of space.


Here come the six-legged devils.



You've selected a primary target, but you still don't know precisely which type of craft it is.



Launch a Data Gathering Missile first...



... and now you know what sort of ship it is and what weapons you'll need to employ to destroy it.

WARHEAD

"The most disturbing aspect of this conflict is that we do not know our enemy. We do not know their reasons for attacking us. We do not know who they are".

It is the middle of the 21st Century and Earth has been violently attacked by an insect-like alien nation, from a near star system, killing billions of humans, swiftly wiping out countries and collapsing world states, throwing the Planet into the merciless hands of a nuclear winter.

*"We intend to turn the tables. We intend to protect ourselves by fighting back. At least we have a weapon: **the FOE-57 spacecraft...**"*

As the remaining humans turn to each other for combined strength and support, the Fist of the Earth world government turn to you to lead the ultimate battle.

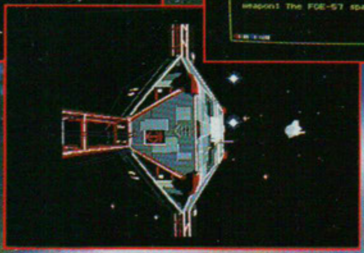
"The safety of the peoples of Earth rests in your hands..."

WARHEAD

- **A most challenging space simulator combining strategy and arcade action**
- **Over 30 hours of solid play**
- **39 missions of space adventure**





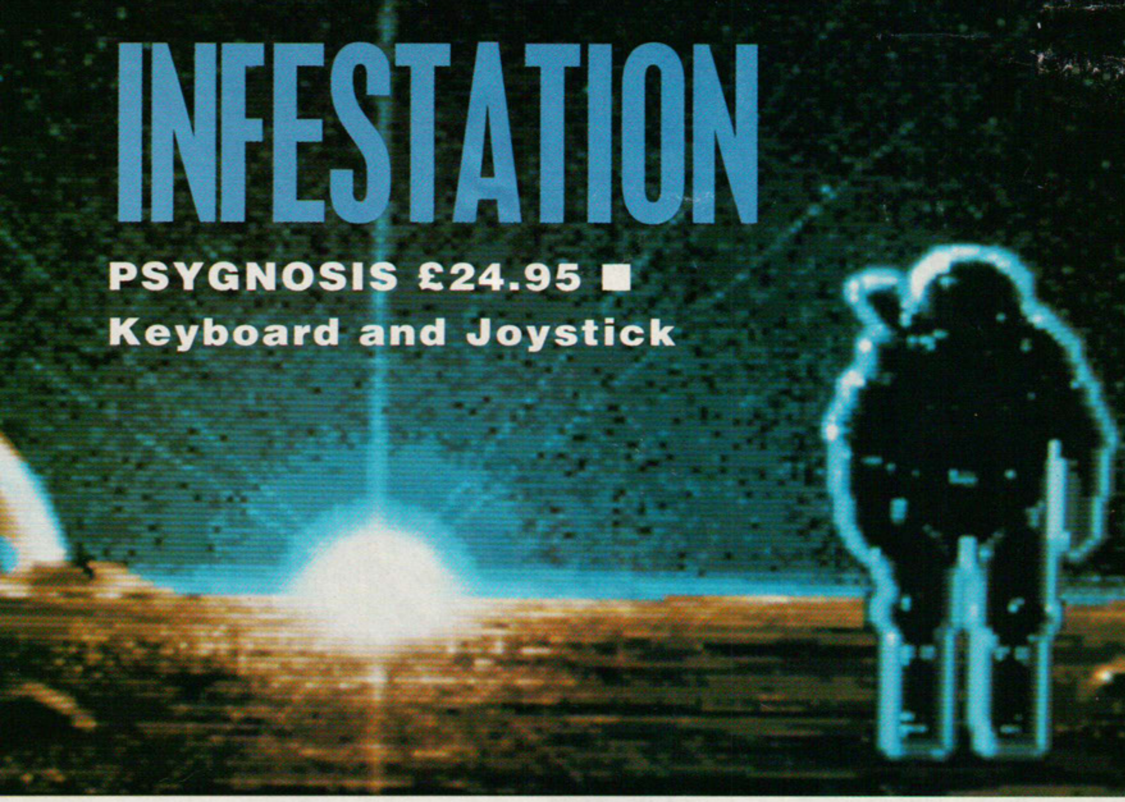


Atari ST screens shown.



INFESTATION

PSYGNOSIS £24.95 ■
Keyboard and Joystick





Scanning the surface at the start of the quest: and something's closing in!



About to enter the transporter, so fire up the HUD to check on atmospheric condititons.

Main Picture: Kal Solar hits the surface of Xelox, kitted out and all ready for action.

Ever since *Aliens* hit the scene there has been a whole host of games featuring races of Extra-Terrestrial beings that hatch from eggs to take over the universe. Even those that don't stick to the original plot have graphics inspired by Giger's eldritch creations. *Infestation* draws its inspiration from the film in both claustrophobic atmosphere and storyline, telling of research station Alpha II on the moon of Xelos.

Recent transmissions from the station have become garbled and unintelligible. The only thread running through the messages tells of a violent life form that has been laying eggs all over the complex – eggs that hatch into deadly insectoid warriors. The diminishing crew has tried to eliminate as many of the eggs as possible, but there are simply too many for them to handle with the meagre equipment they have to hand.

Enter your character – Kal Solar, mercenary soldier, trouble shooter and all-round hero. The game takes place in a filled-3D environment, commencing with Kal being dropped onto the barren surface of Xelos, armed with a handful of Cyanide cartridges with which to dispose of the eggs, a pressure suit, a Manned Manoeuvring Unit (MMU) which allows him to hover above the moon's surface and a pulse rifle for disposing of the occasional enemy-controlled drone.

You must find your way into the complex and travel around dropping cyanide cartridges in the proximity of the alien eggs. Easy enough? Not with alien-controlled droids out to kill you, not to mention the condition of the complex itself: blacked-out corridors, radiation leaks and areas of zero pressure. All around the complex you may find discarded items of technology, which will undoubtedly come in useful at some point.

But take care: you mustn't fail! The safety of the universe is in your hands… now where have we heard that before? ***Maff Evans***



Confusion sets in inside the network: why not try that door over there, to see if that will take you any further?

GRAPHICS AND SOUND

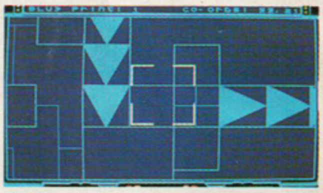
Polygon-constructed 3D is by no means a new technique, but it's still effective if properly used. *Infestation* combines a nicely bitmap-drawn console with solid and flicker-free 3D to produce a tense, claustrophobic-feeling game. The attention to detail is superb, even down to the company names on the title screen! The eerie breathing effects and intro music cap off the scene perfectly, producing more of an atmospheric interactive science fiction story rather than a straight 'hunt and kill' video game – in other words, exactly what an arcade adventure should be!



Helmet off, look up, and… AARGH! What's that??

LASTING INTEREST

As you would expect, there is no way that you can just pick up *Infestation* and rack up a considerable score straight away. It takes time, observation and more than a little thought merely to find your way off the moon's surface and into the complex! Using the terminals for orientation and guidance is essential, and soon becomes a natural part of the gameplay. Keep a blank disk, pencil and plenty of paper handy, since the 'save game' feature is bound to be used a lot in the weeks that you spend playing the game. And the pencil and paper? Well, without a map you won't last five minutes, never mind weeks!



Well, you've managed to get inside the complex: what now?

JUDGEMENT

Infestation is obviously going to be a huge turn-off for fans of quick, ten-minute shoot-em-ups, but those willing to apply a little use of the old grey matter will find it extremely rewarding. The actual complex is a huge place, with a number of dangers to avoid and problems to overcome, but once you start the ball rolling, the search for alien eggs is extremely absorbing. The massive array of controls is also initially off-putting, but soon becomes second nature and seems as casual as operating a stereo. Anyone who has fancied themselves as Hicks or Ripley in *Aliens* can live out their fantasy.

GRAPHICS	8
SOUND	7
INTELLECT	7
ADDICTION	8
OVERALL	89%

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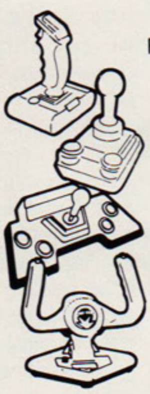
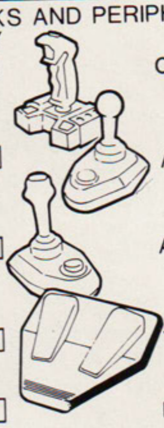
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A well-timed jump is needed to gain posession at the tip-off.



Cinemaware carry on the humour with some rather dubious-looking promotors!



Choosing the players who will actually appear on the court is a precise affair.



No TV show would be complete without a wittering frontman.



The week's games: can the Marauders shine through? It's extremely doubtful!



Now then, let's look at the team statistics and see who's most likely to be fired.



The tactical screen. This is the part of the game where players are positioned on the court.

TV SPORTS BASKETBALL

CINEMAWARE £29.99 ■

Joystick and Keys

Taking a rest from their usual style, 1940s serial-orientated games, Cinemaware have once again turned to the US TV sports channels to bring us a second sports sim, *TV Sports Basketball.*

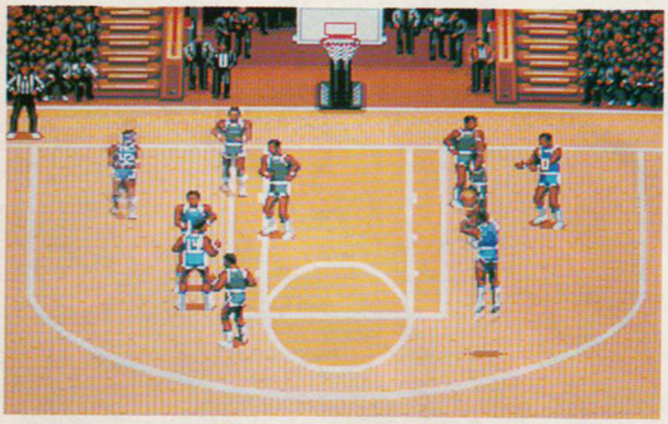
Following in the same vein as their previous sports release, *TV Sports Football,* the game places you as a player or manager (or even both, should you be so inclined) in an American basketball league. You can either opt to play as an established US league team complete with its own set of players, or perhaps design your own team from scratch.

Those not wishing to take up any excercise – be it computerised or otherwise – can just watch their team carry out the set tactics and shuffle the figures around depending on the results.

If you feel left out of the action you can always jump in and start controlling the team directly. If, on the other hand, you feel like putting yourself in the shoes of a single player and following him through his career then you can select the 'role playing' section.

The pattern of play in the league follows very closely the pattern of the actual American basketball league, the top teams from each division qualifying for the play-offs, which may even lead to playing in the World Series – but only if you're good enough!

Maff Evans



Oh dear, looks as if the Marauders aren't coping at all well with the New York offense.

GRAPHICS AND SOUND

As you would expect, Cinemaware have done the business in the presentation department. The intro screens are humourous, the animation is superb and the music is atmospheric. All the usual touches such as the wacky promoters and charismatic TV presenter have been included, as well as extra features like cleaners sweeping up pieces of broken backboard in the distance. The overall feel is very much in the American TV mould – even the programming credits read like the end credits of a TV show!

LASTING INTEREST

The wealth of options initially presented to the player makes it seem as though there is a good deal to keep you playing, but unless you have a large supply of friends to play against in the league or you prefer watching the computer plays the games for you then you'll soon wander off to find something else to lavish your attention on.

The whole thing is rather like watching a cartoon of a game of basketball rather than actively taking part – the computer does far too much, which prevents the player from getting seriously involved. Only dedicated 'manager' fans will find the game enthralling enough to capture their attention for more than a few hours.

JUDGEMENT

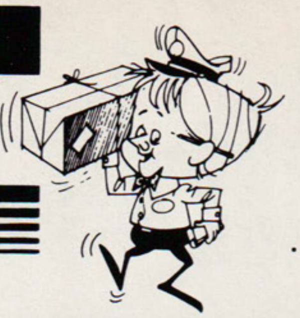
The dividing line between an accurate simulation and a playable action game is often considered a narrow one. Unfortunately, Cinemaware's latest offering falls the wrong side of the line. *TV Sports Basketball* is packed with information to make it one of the most stunningly accurate sports simulations ever, but the actual game sections are severely lacking in gameplay. Stopping the opposite team from storming past your players and scoring every time is virtually impossible – a task which isn't helped by the unruly and badly-implemented control system.

It's hard to believe that the team that brought us the superbly-presented and wonderfully playable *TV Sports Football* can have come up with a product that's enough to put people off the game of basketball for life. Nice graphics, a myriad of setting and options and slick presentation are all very well, but look a little deeper and all that is left is nothing more than an expensive and frustrating basketball manager game.

GRAPHICS	8
SOUND	7
INTELLECT	6
ADDICTION	4
OVERALL	51%


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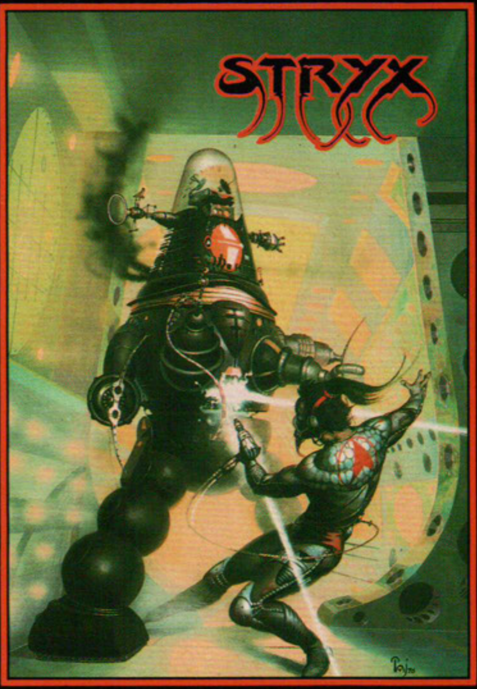
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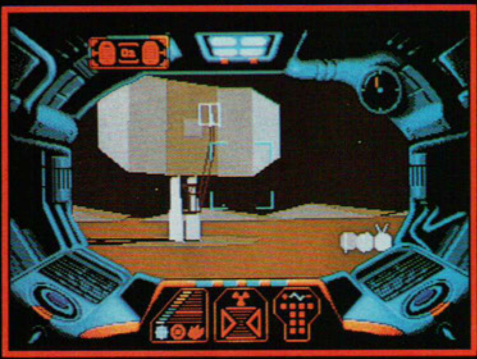


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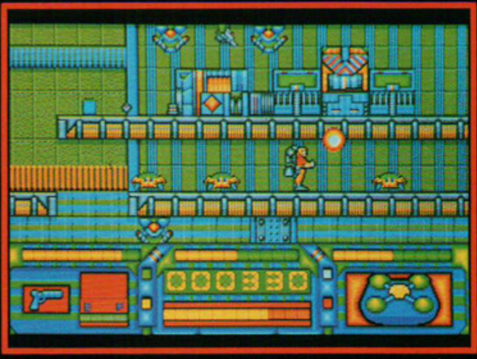












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GAMES PEOPLE PLAY

PSYGNOSIS



These stone heads lie in wait at the end of a stage.

BLACK TIGER

US GOLD £19.99 ■ Joystick

Surfing in on the waves of success from US Gold's *Strider* and *Ghouls and Ghosts*, comes *Black Tiger*, the latest conversion from the Capcom stable.

The Black Tiger of the title is the character you control: a legendary warrior of heroic status, known more for his powers of destruction than diplomacy. But there's no point being a hero without a quest to fulfill, and Black Tiger's is a corker: three fearsome dragons have risen from the depths of hell, bringing torment upon the world. BT must despatch these creatures and restore civilisation to a more even keel...

The mission takes the form of a platform shoot-em-up, as you guide BT through six levels of subterranean fantasy settings, spread over many screens scrolling both vertically and horizontally.

Mr Tiger walks along ledges, and can be made to jump across gaps in the scenery and straight up to climb vertical columns of rock. Arrows show the route that needs to be taken to locate the exit, although interesting items and places can be found by moving off the signposted trail.

Each underworld scene plays host to hordes of diabolical creatures, all of whom are out for Black's blood. Successful attacks deprive BT of chunks from his precious energy meter, until eventually his current life comes to an end. However, Black can defend himself with throwing knives and a particularly vicious blade-on-a-chain device which is launched at the enemy, yo-yo fashion.

On the enemy's demise, a 'Zenny' cash token is left which can be pocketed. Whenever Black comes across one of the numerous stone men, they spring to life offering some sort of assistance, and occasionally providing the opportunity to buy extra equipment with the Zenny coins: arms and armour, extra energy and time, plus keys are all up for grabs. The keys can then be used to open the locked chest which litter the caverns for whatever reward – beneficial or harmful – which wait inside.

On reaching the end of each stage, the inevitable end-of-level guardian (or indeed guardians) must be defeated in order to pass through to the next. Black Tiger has a limited time within which to escape from each level, and the mission continues until Black Tiger has defeated the dragons, or his remaining lives have all been senselessly wasted in pursuit of his quest. ***Steve Jarratt***



The small stone geezer on the right is actually...



... the proprietor of Weapons 'R' Us. Spare a Zennny guv?

GRAPHICS AND SOUND

Black Tiger might not appeal to the more quality-conscious Amiga owner. The playing area is quite small, and the intrusive jerky background scroll makes play less than fluid.

But there's some nice animation as the enemy creatures as they explode and breath fire, although things can get a little confusing in the heat of battle.

Spot effect and soundtrack do their respective tasks, but are nothing to shout about.



Making like Chris Bonnington and climbing a vertical column.

LASTING INTEREST

Three continue options help to sustain the offensive, and the sheer size of the task is enough to keep most players bashing away for some time. The 'explore and discover' nature of the gameplay is quite captivating, and certainly helps to maintain its appeal.

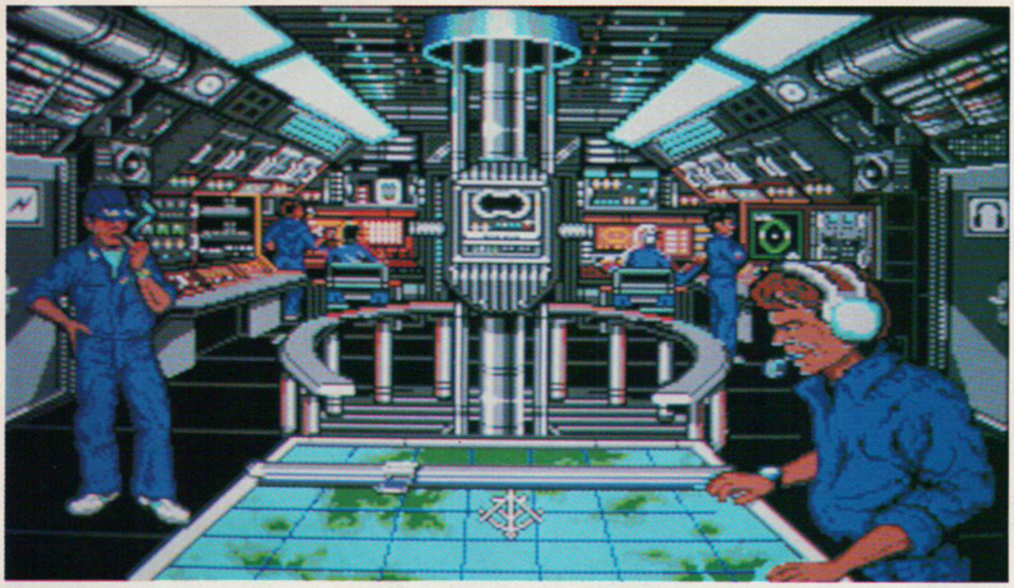


Believe it or not, your character is in the middle of this mêlée!

JUDGEMENT

Control of the main character is fiddly at first, with a one-strength jump which cannot be controlled in mid-air. However, *Black Tiger* bears enough of a resemblance to its coin-op parent to content most devotees, and although this unashamed ST port-over is a far cry from the class of US Gold's previous Capcom conversions, it still manages to entertain to a reasonable degree.

GRAPHICS	4
SOUND	4
INTELLECT	2
ADDICTION	7
OVERALL	71%



The main game screen. Select your various crew members here to access different parts of the sub. The chap in the foreground is in charge of navigation.

688 ATTACK SUB

ELECTRONIC ARTS £24.99 ■

Mouse and Keyboard

MicroProse have had things to themselves for a long time in the submarine simulation market: their aged game *Silent Service* gave the player a chance to experience the thrills and spills of captaining a World War II sub. Now Electronic Arts bring things right up to date with a simulation of the latest range of American and Soviet subs.

It's mainly a one player game, but on some missions two players can play head-to-head via modem, each controlling a different side's sub. There are 10 missions in total (although the first is merely a practice mission) which may not sound like much but, as anyone who's played this sort of game will know, one mission can last a very long time. Moreover, once you have played them in the American sub you can play them again in the Soviet one, effectively doubling the number of missions.

The whole game is played and controlled from a main screen depicting the inside of your sub. By moving the mouse over certain members of your crew and clicking, you reveal different areas of the sub. The areas include the radio room where orders are sent and received, the navigation room where waypoints and so on are set, the engine room, torpedo control, damage control, the sonar room and the periscope. Obviously the options available in each room vary, but the act of switching between rooms simply involves hitting a function key.

Once you've got your orders and have decided on a strategy the first thing to do is jump from room to room and complete all the necessary tasks. Then you can switch on all the latest gadgetry (things like the contour computer, which gives you a constantly-updated image of the surrounding sea bed) and settle back for some nail-biting tension. ***Andy Smith***

GRAPHICS AND SOUND

Well, you can't expect brilliant sound, can you? The few spot effects that are there are fine. The graphics are much better and everything has been well drawn: the few little bits that are animated, are animated well.

LASTING INTEREST

The missions are timed, which some will see as a good thing and others as bad. With about 20 missions for the solo player there's plenty to keep you busy.



The first place to visit is the radio room, which is where your orders come through.

JUDGEMENT

You have to be a certain kind of person to enjoy a sub sim: someone who likes to think about their actions and doesn't mind waiting a few minutes for things to happen. Sub sims rely on building tension and *688* does it beautifully. A great example of the genre and a brilliant game to play with a remote friend via a cable link.

GRAPHICS	8
SOUND	5
INTELLECT	6
ADDICTION	7
OVERALL	86%



Well into a mission and there's something up ahead. The active sonar pings are a dead giveaway and so is the speed – an enemy torp is closing in rapidly. Now you face a few frantic minutes of action as you try to fox it and convince it you're not really there.



Some rooms present you with a digitised picture of a crew member. Note the message window at the base of the screen: here's where all important things are brought to your attention.

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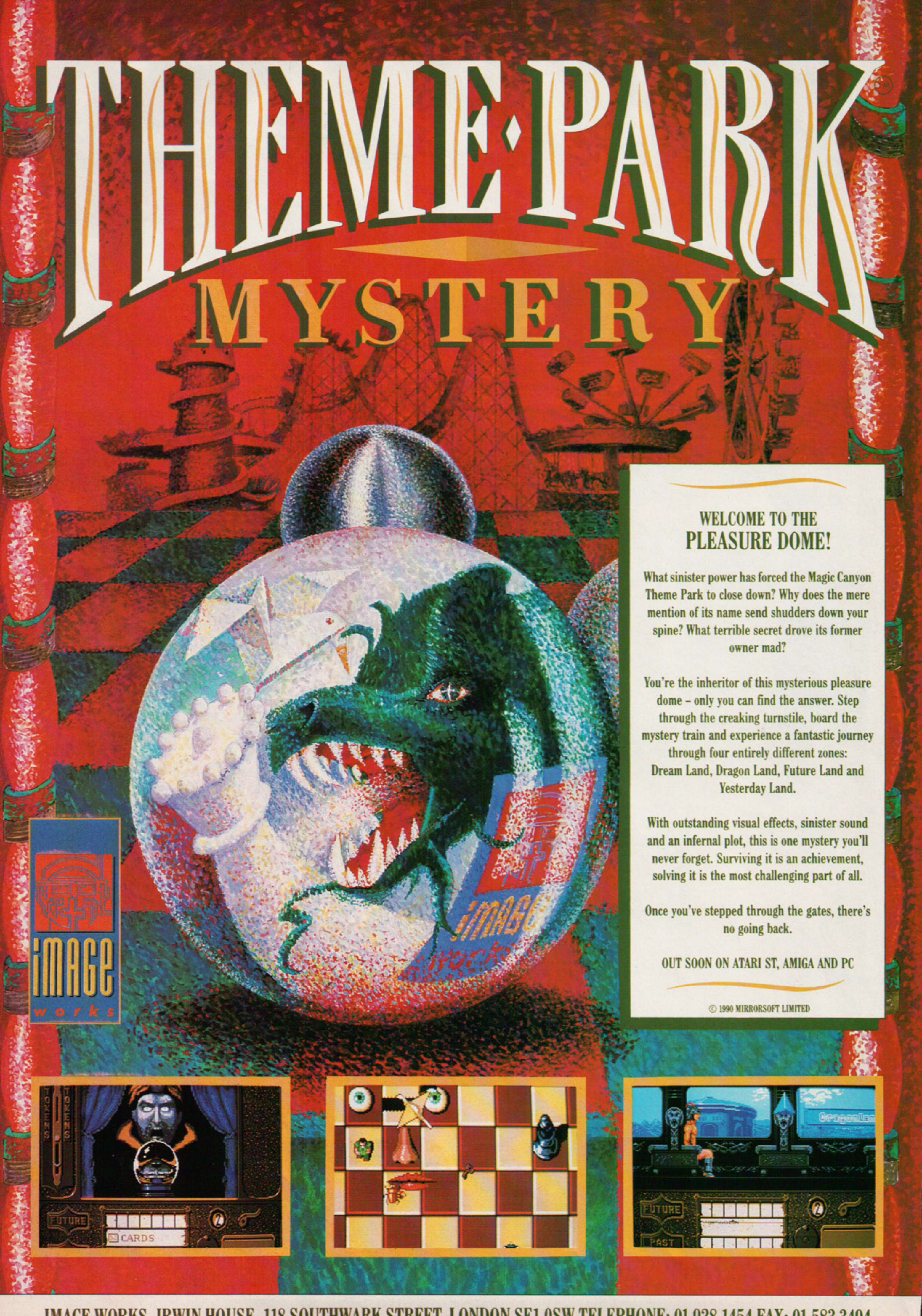
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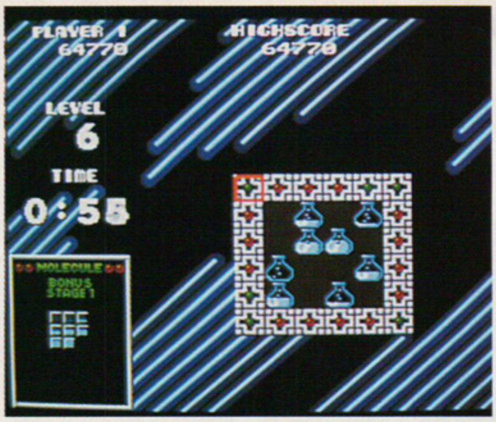
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There's only one possible place to build this molecule – but where is it?



The first bonus screen – the principles are the same, but you arrange bottles from empty to full.

ATOMIX

THALION/GRANDSLAM

£19.99 ■ Joystick

Just because you're relatively new to the scene doesn't mean you have to produce something radical, does it? German new boys Thalion don't think so.

In fact, simple puzzle games seem to be making something of a come back, what with *Pipe Mania* last month and *Atomix* this month. And like *Pipe Mania*, *Atomix* takes a couple of ideas from previous games and modifies them to suit. The game is made up of 30 levels and on each level the objective is to manipulate a set number of atoms into a molecule: for example, the first level sees you moving two hydrogen atoms onto an oxygen atom to make water.

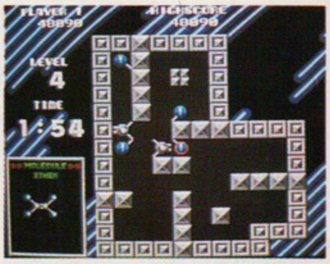
Unfortunately, the atoms can't just be plonked any old how – they have to fit together properly, as shown in a picture on the bottom left of the screen. The other problem is that once you've picked up an atom with the square cursor you can't move it around as you wish. Push the joystick in a direction and the atom will move in that direction until it runs into either a wall or another atom.

Sounds like you could live with the problem? It's trickier than you'd imagine. And as if that weren't enough, there's also a murderous time limit to compete against. Fail to complete a level and it's game over – and there are no passwords to enable you to restart at the last level. There is, however, a second chance in the form of a trade-in where you can 'spend' 10,000 points in return for another stab at the last level.

As you'd imagine, the chemicals to be built become more complex as you go on, the mazes become more awkward to manoeuvre around (often you're left with only one possible place in which to actually build the thing) and the time limit never gets easier. ***Andy Smith***



The start of the game and you have only three atoms to move.



At this stage things are starting to get decidedly tricky.

LASTING INTEREST

Even with 30 levels to play through, it's too easy to complete and once you've cracked a level it becomes routine every subsequent time you play it, which is a tad annoying.

GRAPHICS AND SOUND

Everything looks fine and is well drawn and animated. It's not a stunner but then it was never designed to be. As for the sound: well the copy we reviewed had none although Thalion assured us just some gentle background music would be added. This will only enhance the game.

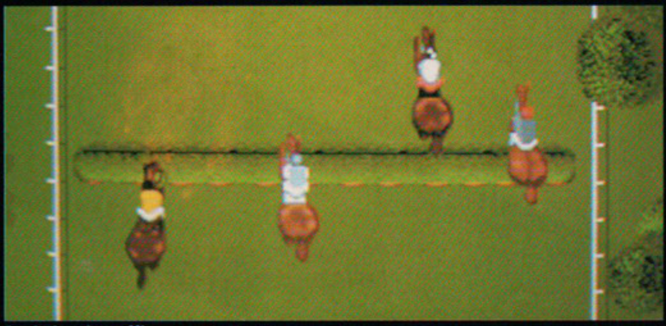
GRAPHICS	7
SOUND	N/A
INTELLECT	7
ADDICTION	8
OVERALL	61%

JUDGEMENT

Neat, simple, highly addictive and very playable. A great little game that fans of *Xor* and *Pipe Mania* will love. All it really needs is more levels, because once you get into it you'll find it far too simple to complete.

GRAND NATIONAL

ELITE £19.99 ■ Joystick



And they're off!

Here's a novelty. Take part in the Grand National! This simple viewed-from-above race-em-up puts you in the saddle of a National runner with 30 fences to jump.

First, though, you have to decide whether you'd like a three, five or ten year game and spend the £10,000 you're given on a horse. Any remaining monies after the purchase can be gambled on the race (betting on your own horse is a good idea). The idea then is to work your way up through the pack by going faster than the other horses but without exhausting your horse. Speed and energy indicators are on opposite sides of the screen and the game really revolves around keeping these two balanced until you can go flat out for the line a few fences from the finish.

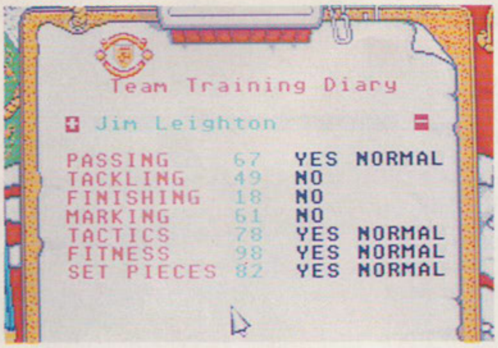
To keep you on your toes as you race round, you have to hit the firebutton at the correct time to force your horse to jump and clear the fences. Finish a race in the top four and you'll earn some money. At the end of the game you'll want to have amassed as much of the green stuff as possible.

This is very simple stuff. There's almost no depth to the game and although it's quite playable it's not likely to keep you interested for much more than an hour. *Andy Smith*

GRAPHICS 5 / SOUND 5 / INTELLECT 3 / ADDICTION 6 / OVERALL 30%



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The scanner at the base of the screen will move to another corner if the action starts happening there, just to avoid confusion.



Every player has to keep fit by being put through his paces in training, even the goalie. If he doesn't train, a player becomes susceptible to injuries.

MANCHESTER UNITED

KRISALIS £24.95 ■ Joystick and Mouse

The heavyweights of the First Division have leant their name to this one or two player simulation of their club – can Anco's *Kick Off* hold off this challenge and keep its place at the top or will Man Utd steal the crown?

To kick off, it's a game of two halves – arcade and management. In the arcade game things take the standard form – you control the player nearest the ball and by passing to other players and shooting attempt to put the ball past their goalie. The player first selects his team from his pool of players (goalkeeper in goal, strikers up front and so on is a good idea). Then once the length of each half has been decided it's time to play the game, which features a side-on view of the action.

Should you decide to play the full management simulation, though, you not only have to look after your team, but must also guide them through a complete season including Littlewoods and FA Cup matches. Looking after your team involves overseeing the training programmes of each squad member and arranging for the transfer and acquisition of old and new players.

Once you've checked that everything is in order you can launch into a game and sit back to watch your team go about their business. Should things take a turn for the worse you can always join in with a quick press of the fire button and take over and try to get things back on an even keel.

Fortunately, there's a host of options to make your life easier if you're finding things tough, such as the opposition rating – where you can decide just how good the opposition's goalie, attack and defence are going to be – and the game save feature which means you don't have to play the whole season through in one sitting. ***Andy Smith***

GRAPHICS AND SOUND

The ball moves like it's full of lead, not air, but the animation is not the smoothest ever seen. Then there are the digitised piccies of real TV footage every time a goal is scored – this (almost impossible to see) clip would be a nice touch if it was anything like the goal you or your opponent had just scored, but it isn't. The sound is poor, being limited to a one second loop of almost crowd-like white noise and a few bumps as the ball moves around. Second Division quality in both these departments.

LASTING INTEREST

Better, especially if you're a fan. Completing a season will take some time and it's tough especially if you play against a half-competent human opponent or have the opposition set to 100% when playing the computer. The lack of depth in the game, though, kills off its overall lasting interest.

JUDGEMENT

The arcade game is not bad, it's just not brilliant. The biggest letdown is the management game which is far too limited. *Man Utd* falls down where every other arcade/management game has fallen down – the arcade side is not as good as it could be in gameplay terms and the management side is far too limited to stand up on its own.

GRAPHICS	7
SOUND	4
INTELLECT	3
ADDICTION	5
OVERALL	62%



The first choice to be made is selecting the formation of the team from five options...



...then choose who plays in which position and you're then ready for kick off.

ITALIA '90

CODEMASTERS £4.99 ■ Joystick or Keyboard

There are bound to be more of these in the run up to the World Cup, so get used to them. This one offers up to four players the chance to take part in the finals as well as having a bash at some circuit training and indulging in some outdoor skill practice.

The actual match section is viewed from almost above and allows the player control of the nearest team member to the ball – you can switch to another player by hitting the fire button. The game looks all right but plays awfully badly. The sluggishness you can live with and you can even put up with the weird scroll, which sometimes lags far behind the action – but what really screws the game up is the inability to alter the direction of your player once you've pressed the fire button for a shot.

Spend a few minutes learning how to get round that, though, and the three matches you play in solo mode become ridiculously easy to win. Even with a couple of mates playing, it's really not up to much.



It's Russia to kick off, can they pull it back?

The circuit training and the skill practice do little to redeem the game, which is also a shame. The nicest thing to be said is that Codemasters have not, at least, overcharged for the game. *Andy Smith*

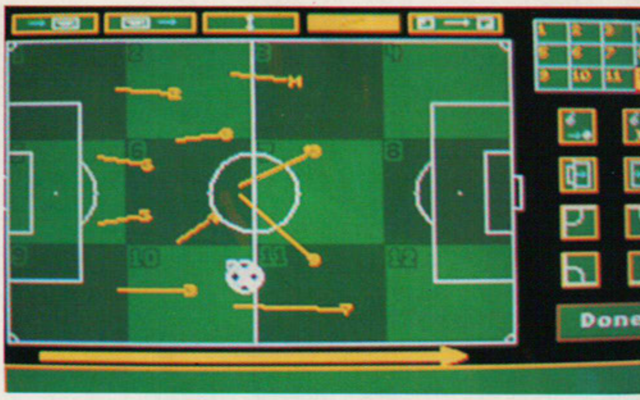
GRAPHICS 5 / SOUND 4 / INTELLECT 2 / ADDICTION 4 / OVERALL 27%


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The main menu from which all the game areas are accessed.



The tactics screen: alter the gameplay to your heart's content.

PLAYER MANAGER

AMIGA FORMAT GOLD

ANCO £19.95 ■ Mouse and Joystick

So what can you do to improve what is already the best football game ever to have appeared? Even Anco, publishers of *Kick Off*, tripped themselves up when they tried to enhance the excellent original (Amiga Format Gold Award, Issue One) with an expansion disk called *Extra Time*. That went down like a lead balloon because, to quote our review; "it's almost like you can take all the good bits out of *Kick Off* and play a very average football game". But now there's *Player Manager*.

There are two very major differences between *KO* and *PM*. *Kick Off* is the best one or two player arcade footy game whereas *PM* is for the solo player and contains not only an enhanced version of *KO*, but a whole management game as well.

The management side first. Starting the season as the newly-appointed manager of a division three club (called whatever you like) the long-term aim of the game is to take your bunch of hopefuls to the top of the first and win several cups along the way. Each season is made up of 24 matches and doing well involves not only juggling your players and picking the best side for each match, but also overseeing the training, scouting for new players, putting players you're not happy with on the transfer list and the all-important on-field tactics.

There's a whole section of the game that lets you decide where players should be on the pitch at any one time: during corners, in attack and so on. All the player-designed tactics and modifications can be saved to disk so your team really can play as you want them to. And statistics freaks will be pleased to know there are reams of them to wade through should you so wish.

The arcade side of things is in two main parts. You can play properly, as one man in one position, or you can control the whole team just like the old days. Do the latter, however, and your team will suffer a slight loss of form. The matches are in the classic viewed-from-above style and each lasts three minutes each way.

Play the matches, deal with the problems, enjoy the victories and remember to save your position when you've had enough for one day. ***Andy Smith***

GRAPHICS	8
SOUND	5
INTELLECT	5
ADDICTION	9
OVERALL	93%

GRAPHICS AND SOUND

There's not much to listen to, just the occasional whistle blow and crowd noise during the match. The graphics though are much better as every *Kick Off* veteran will know. They're smooth, quick and well animated. During the management section, too, all the menus and windows are big and bright so it's not easy to make a mistake.

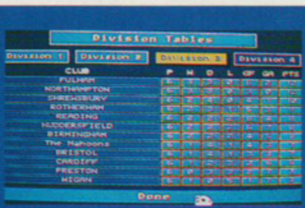
LASTING INTEREST

You'll be playing this for months to come: there's so much to do!

JUDGEMENT

After the disappointment of *Extra Time*, this is cracking stuff. The mix between management and arcade is the best to have appeared in any football game, making it enthralling and addictive. There's a whole mess of extra options and choices that, added together, make this a worthy upgrade to *Kick Off*. If you own *KO* already and are fed up with having to play the computer the whole time this is a must. If you don't own *Kick Off*, *Player Manager* should be near the top of your shopping list.

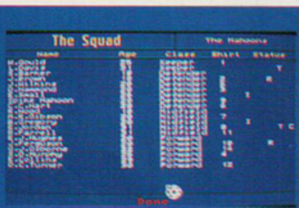
The version we played did contain the odd bug, however, (the corner-kick one from *Kick Off* is still there) and it did crash occasionally so make sure you save your position often.



Six games in and you're safely in the middle of the division.



You've splashed out on a new signing so your wallet's empty.



Here are your hopefuls: two are injured, two want transfers.



A quick bit of training...



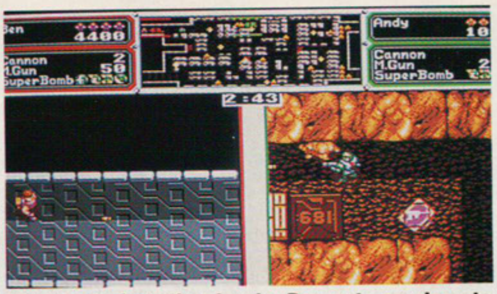
...and it's time to pick the team that will play on the day.



Then kick off and see how well your team performs.



In two player mode. Andy's dropped a bomb but has run into trouble with a baddie.



The start of another level – Ben gets as close to the wall as possible to avoid the enemy gunfire.

CRACKDOWN

US GOLD £24.99 ■ Joystick

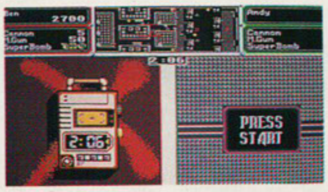
Andy Attacker and Ben Breaker are unlikely names at the best of times, but it's even harder to believe both of them are FBI agents. Then again, when you're designing a coin-op machine's scenario you are allowed some poetic licence.

It's a one or two player game converted from the original Sega machine in which Andy and Ben are out to destroy the nefarious Dr K. The action is viewed from above and takes place in the 16 levels of Dr K's fortress, which is infested with his army of biogenetically-engineered humanoids.

The agent's job is to destroy each level of the fortress by dropping three special explosives per level – the exact positions the bombs have to be dropped at are marked out by large red crosses. Finding the places to drop the bombs involves wandering through the mazes that make up each level and constant referral to the map at the top of the screen.

Finding the crosses is much easier than dealing with the baddies who patrol the levels and come popping out of concealed exits, but there are two ways of dealing with the baddies. The first way is to dodge them, pressing yourself tight up against walls: don't rush too much and this proves to be a good way of avoiding them, as a lot of the baddies follow set patrol patterns. The other way to destroy them is by shooting them with your machine gun and rocket launcher. The limited ammo supplies of each of these weapons can be replenished by walking over extra ammo boxes, which can be found lying around each level.

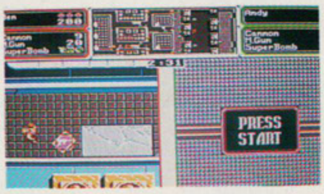
Plant the bombs and find the exit before the time limit expires and any remaining time is converted into bonus points: then you are ready to move onto the next, harder, level. ***Andy Smith***



That's the second bomb dropped which leaves you just over two minutes to drop the last one and get the hell out of there.

GRAPHICS AND SOUND

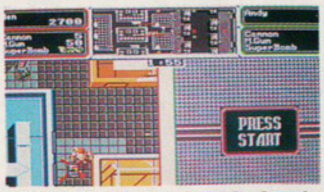
Crackdown looks just like its arcade parent: well drawn and well animated. The music and effects are fine too. Software houses are really getting to grips with these arcade conversions, especially in the cosmetics dept.



Andy runs over an ammo symbol and collects some more bullets.

LASTING INTEREST

In one player mode it burns out much faster than it should. In two player mode it's better but even then it's not going to have you playing for months.



X marks the spot: drop the bomb.

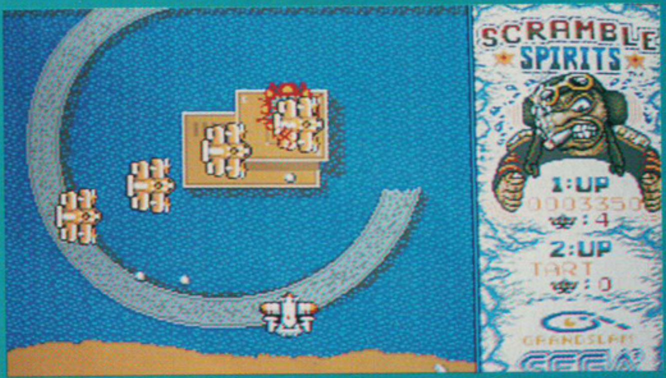
JUDGEMENT

It's far too repetitive as a one player game – this is no fault of the conversion but a fault of the original game. In two player mode it's a lot more fun but it's still not breaking any new ground and won't win any awards for originality or gameplay.

GRAPHICS	8
SOUND	6
INTELLECT	2
ADDICTION	6
OVERALL	67%

SCRAMBLE SPIRITS

GRANDSLAM £19.99 ■ Joystick



Avoid the enemy fire, destroy the enemy planes... and keep doing it.

Here's a one or two player vertically-scrolling shoot-em-up that sees the player flying through six levels of frantic action, bombing and blasting the enemy.

There are flying baddies and ground installations to destroy and extra weapons to pick up in the shape of up to two small drone planes that accompany you. Once you have a drone you can make it strafe the ground while you concentrate on the wave after wave of flying aliens.

You have five lives to start with plus a few continue credits, so you can get quite far into the game even on the first sitting. It's not at all bad, but it's very standard fare. This again is no fault of the conversion, which is good, but a fault of the original game design. There are much better shoot-em-ups about if you really need another one. *Andy Smith*

GRAPHICS 7 / SOUND 5 / INTELLECT 1 / ADDICTION 5 / OVERALL 54%

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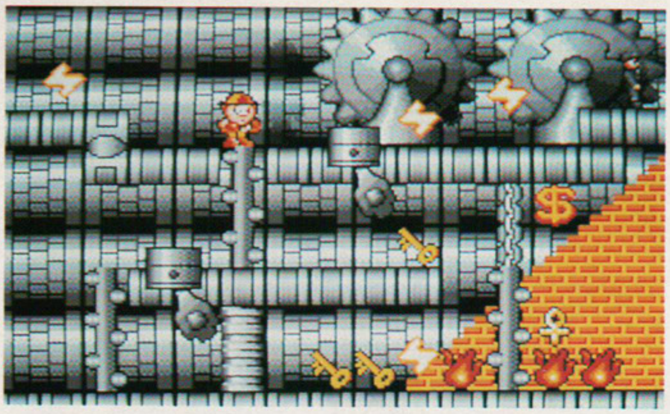


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London in the Industrial Revolution: collect four ankhs to get extra lives, collect keys to open barriers, and try to avoid the pistons.

KID GLOVES

MILLENNIUM £24.99 ■

Joystick and Keyboard

How often have you wished you were somewhere else when boring relatives come to visit? Well take pity on Kid, because his great uncle Indiana Stallone was one of the most boring relatives anyone could have.

Every Sunday, Kid's family were treated to ridiculously unbelievable anecdotes from the old man, about how he fought off savages in the Amazon jungle, tripped out on the West Coast (California, that is, not Blackpool), visited the Ice Age and fought Gladiators in Egypt. Uncle Indiana was old, but the Ice Age? And were there Gladiators in Egypt? This was all too much for Kid, so one Sunday he scurried out of the room and took refuge in his uncle's study.

Nosing through the junk he found an old dusty pair of boxing gloves and decided to try them on. Admiring himself in a *Raging Bull* pose in the mirror, he noticed the gloves sparkling. Thinking that this shouldn't be happening, he tried to take them off, but as soon as they touched there was a bright flash of light and Kid found himself standing in a jungle with a rather unfriendly looking native approaching. Maybe he should have stuck with the boring stories!

In *Kid Gloves,* you take control of Kid in his attempt to return home. You must fight your way through five time zones, starting in a prehistoric jungle and continuing through ancient Egypt, the Ice Age, London gripped by the industrial revolution and the psychedelic West Coast.

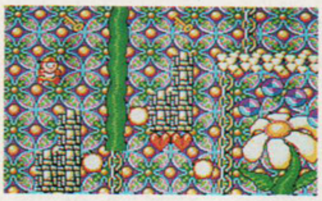
Each zone is split into ten screens, each containing a variety of monsters to avoid, obstacles to negotiate and items to collect. Kid can collect keys to open doors barring his way, money to spend in the shops and food for bonus points. The monsters can be dispatched with a shot from Kid's weapon. This is initially a catapult with two reusable magic coins, but extra weapons such as fire bombs, bouncing 'deathstars' and a powerful laser can be bought from shops found on the way – if Kid has picked up enough money!

Occasionally, tricky situations can be overcome by using a little magic from Kid's limited supply of spells. Using magic causes a random spell to be cast ranging from Sesame, which opens doors, through Safety which causes dangerous obstacles to be rendered harmless, to Frozen, which stops monsters in their tracks.

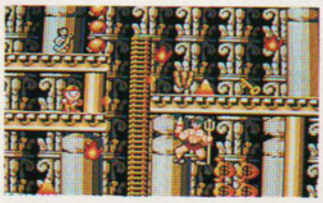
Once Kid has made his way through all the screens in the five zones, the gloves can tranport him back to home and Uncle Indiana's not-so-boring stories. ***Maff Evans***



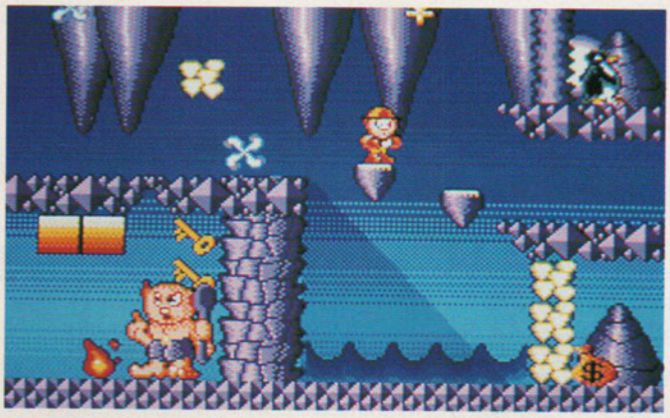
A Megalaser would be handy – but just look at the price!!



Wow, man! Like, look at the psychedelic freaky flowers.



Way back in Ancient Egypt – but what is a gladiatior doing here?



Get across the water in the Ice Age – but watch out for that penguin!

GRAPHICS AND SOUND

The graphics of *Kid Gloves* have obviously been designed with cuteness and colour in mind, but instead of cute the sprites are just small and the use of colour is a little over the top at times. The backgrounds on the Egyptian and Californian levels are so gaudy that it's extremely difficult to see where the walls and floors are supposed to be.

The sound is all right, with some jolly sampled effects, but the music sounds more like a C64 tune circa 1985 rather than '90s Amiga. Generally the tone is of a half-hearted attempt, which in this day and age isn't quite good enough.

LASTING INTEREST

Initially, *Kid Gloves* is great fun to play. Watching Kid in his oversized sportswear jump around making strange noises is most amusing. However, much in the same way as 'classic' (in other words, 'old') platform games worked, the game depends on the player learning patterns and timing for completing of the levels. This is fair enough when you first start playing, but once you've learnt the patterns it becomes incredibly easy to waltz straight through from screen 1 to screen 50 in no time at all.

There just isn't enough variety involved from game to game, so once you are proficient at the levels every turn could play just like the last. Not even the most hardened platform fans are going to be happy with a game that loses its appeal too quickly, nor are they likely to return to a game that doesn't provide any challenge after they've seen the different screens.

JUDGEMENT

Nowadays, a game set in a familiar mould must try to include that extra spark that pushes it ahead of all the others in the genre. Despite a humorous plot and an attempt to create a cute 'small boy' hero for players to identify with, *Kid Gloves* is just a basic 'progress from screen to screen' platform game like so many seen in the past. The sound and graphics are acceptable without being special, the gameplay overly simple and the addiction short lived. Even those new to computing and not old enough to remember the original *Manic Miner* can see the Amiga version to realise how much the format has aged, and sadly *Kid Gloves* just follows the tradition without providing much interest to leave its mark on the History Book of Software.

GRAPHICS	6
SOUND	5
INTELLECT	3
ADDICTION	5
OVERALL	61%

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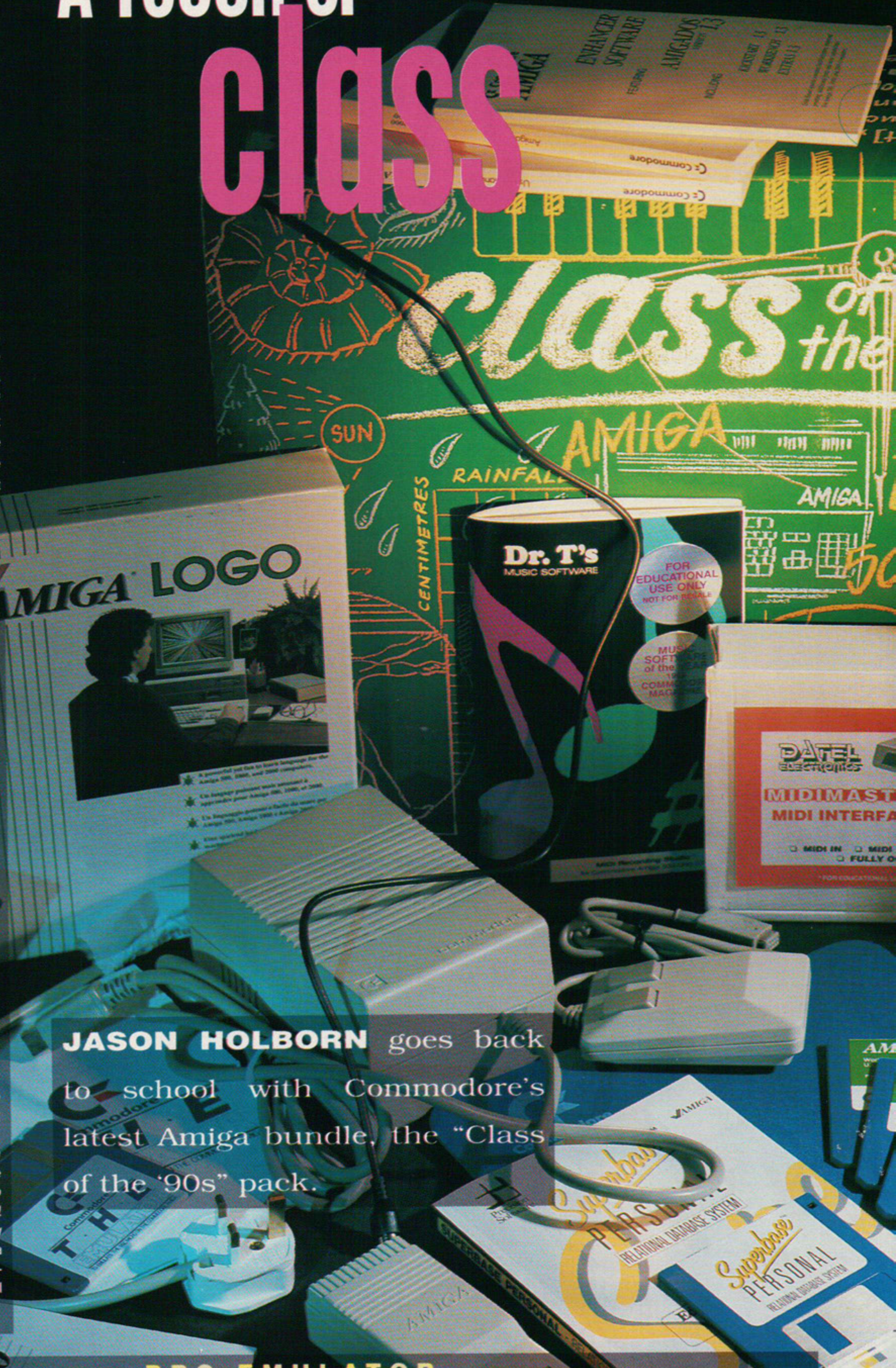
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GAME SELECTION WILL CHANGE SUBJECT TO AVAILABILITY.

A TOUCH OF class

More and more people are making use of the Amiga's obvious potential as an effective learning tool. Within a traditionally Acorn-dominated market, Commodore are making major moves in an attempt to break Acorn's monopoly. The flagship of this assault is the company's latest bundle, the Class of the '90s pack.

Although the pack has been available for a couple of months now, it has only recently been put on offer (minus the computer) to the general public. The pack consists of seven individual software packages that were previously sold separately for considerably more than their current asking price. Although the pack is designed specifically for use within schools, all the programs included fall into the category of being real-world applications that would be as useful in the office and the home as they are in the classroom. So, here's a look at what each program has to offer.



JASON HOLBORN goes back to school with Commodore's latest Amiga bundle, the "Class of the '90s" pack.



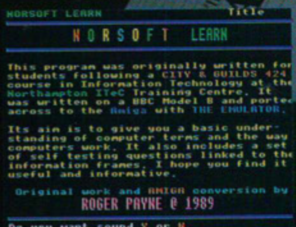
AMIGA LOGO

In primary schools, at an age when most of us were still struggling with our times tables, children today are learning to program computers.

Logo is a simple programming language that provides its rewards in the form of graphic displays. The basic instructions to the language are geometrical, moving a pointer called a 'turtle' around the screen to draw pretty patterns: but *Logo* also mirrors many of the complex methods used in programming.

Recently we tested *Amiga Logo* in a primary school where the kids already used *BBC Logo* – and they were very impressed! Commodore are even now upgrading *Logo* to control a 'floor turtle', a simple robot powered by remote control, which'll make it an even better product.

BBC EMULATOR



Acorn have had it all their way for several years now, but with the increased activity of machines such as the Amiga within education, the aging BBC micro looks set to finally be put into retirement. Replacing a computer is simple, but what about all that high-quality BBC software that has served schools so well for years? Replacing that could be an expensive and frustrating task. However, help is at hand in the shape of Commodore's own BBC emulator.

The Emulator, as it is properly called, is a software-based emulator that turns the Amiga into an almost complete clone of a BBC Micro model B. Any programs that are written in either BBC BASIC or legal 6502 assembler can be run on the Amiga without problems. However, some software (notably games software) bypasses the BBC operating system and hits the hardware directly. Such software will definitely not work. But for bridging the gap during the transition between old and new, *The Emulator* provides the answer.

CLASS OF THE '90S £TO BE ANNOUNCED COMMODORE UK (0628) 770088



PUBLISHER'S CHOICE

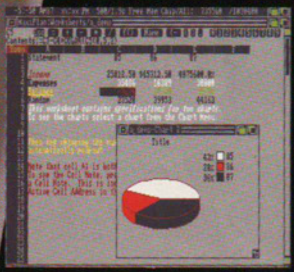


The Disc Company's *Publisher's Choice* consists of not one, but four – count them, four – separate packages. These include a powerful Desktop Publishing system and a word processor.

The heart of the Publisher's Choice package is Gold Disk's *PageSetter 1.2*, a simple DTP package that paved the way for the now-standard *Professional Page*. Like its big brother, *PageSetter* uses a *PageMaker*-like systems of frames that can contain either pictures or text. To make the production of pages a quick and easy task, *PageSetter* even includes both a graphics editor and a text editor. Pages can be printed to either standard Preferences printers or (using the included utility) even to professional PostScript devices such as laser printers.

If *PageSetter*'s text editor isn't powerful enough for your needs, *Publisher's Choice* includes the popular word processing package *Kind Words 2*. *Kind Words* offers both spell checking and thesaurus facilities, making it the ideal introduction to word processing. *PageSetter* documents can be enhanced further by using different fonts and clip art, picked from the package's extensive two-disk set.

MAXIPLAN



No true business computer is complete without that most important of business application, the spreadsheet. *MaxiPlan*, from Oxxi Incorporated in the States, is one of the most powerful spreadsheets available that can quite easily handle the needs of any modern business. Within education, it's the ideal introduction to modern-day financial management.

MaxiPlan can be used for a host of different applications including straight spreadsheet analysis, database management, business graphics and project management. Any range of data within your worksheets can be highlighted and then graphed in up to ten different styles, including 2D and 3D pie charts, bar charts, line charts *et cetera*.

MUSIC RECORDING STUDIO

Music lessons have certainly changed since I was at school. These days, students are as comfortable with synthesisers and MIDI as they are with more traditional instruments such as the violin and piano. To give students an idea of modern recording techniques, the pack includes Dr T's highly-acclaimed budget MIDI sequencer system, *MRS*.

MRS is a powerful sequencer that offers eight tracks of real-time recording, with full editing and song composition. If the MIDI set-up you are using isn't up to the task, the Amiga can even join in with the music making using its in-built sample playing capabilities.



Computers such as the Amiga can't talk MIDI without the inclusion of a MIDI interface. Commodore have even thought of this, so the bundle includes Datel Electronics' popular MIDI interface. Roll over Beethoven!

SUPERBASE PERSONAL

SuperBase was one of the original database management systems to appear on the Amiga. Since then it has been upgraded and expanded to cover all levels of database requirements, from simple relational card files to full-blown database applications requiring the manipulation of multi-megabyte files.

SuperBase Personal is the basic program within this range. The program is an entry-level multi-file relational database management system that uses a very friendly WIMP-based environment to make the program one of the easiest-to-use database systems available. *SuperBase* uses a powerful control system much like that found on a video recorder. Files can be located using sophisticated conditional links. Data held within a file can be in a variety of different formats: straight text, alphanumeric, numeric, dates and even pictures in standard IFF format (as provided by *DPaint* output).



FIRST MICRO

PRESENTS ...

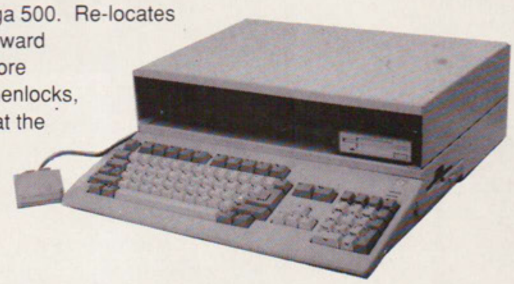
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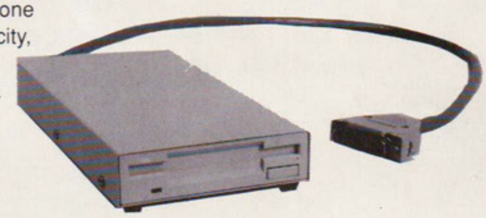
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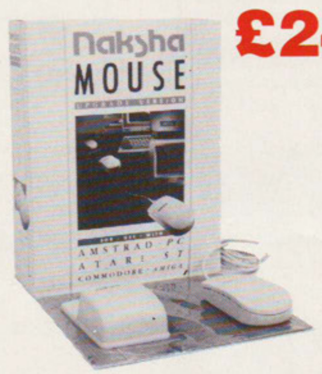
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Amiga Format review March 1990

As we dont want to upset our competitors, we have not reprinted the benchmark results, but we suggest you refer to the Amiga Format review Issue 8 Page 127.

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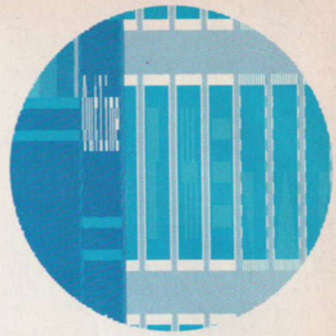
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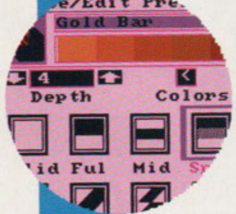
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AMIGAFORMATAPR90

TV star







To most of us, desktop video means one thing – sprucing up the old holiday videos with tasteful titles and graphics. JASON HOLBORN takes a look at a package that allows you to do just that.

Considering the Amiga's domination of the low-end desktop video market – a market which it practically started! – it seems almost unbelievable that there is such a shortage of quality video titling packages available in this country. Sure, there are many 'Desktop Presentation' systems available, but if all you want to do is to add titles to your home videos of granny and the kids on the beach, why should you have to pay hundreds of pounds for a 'do it all' package? Chances are that it will probably contain a large number of features that you're never likely to ever want to use anyway!

So what do we need from such a package? Put simply, all that is needed is a program that will allow you to quickly and easily knock up eye-catching screens that can utilise any number of different font styles and effects. Does such a package exist? Up until now, the only packages even worth considering consisted of just three titles (no pun intended) – HB Marketing's *Video Generic Master*, Aegis' *VideoTitler* and finally the unacclaimed king of them all, Zuma's *TV*Text*.

*TV*Text Professional* is the follow up to Zuma's earlier product and offers all the power of the original plus a generous helping of new and improved features. As such, both the price and minimum machine



LEFT: If the preset styles aren't to your liking, then you can create you own. Here, the face of the text is being defined.

RIGHT: Setting up the text shadow. Choose between drop, cast, strobes or glows.

FAR RIGHT: The text outline editor.





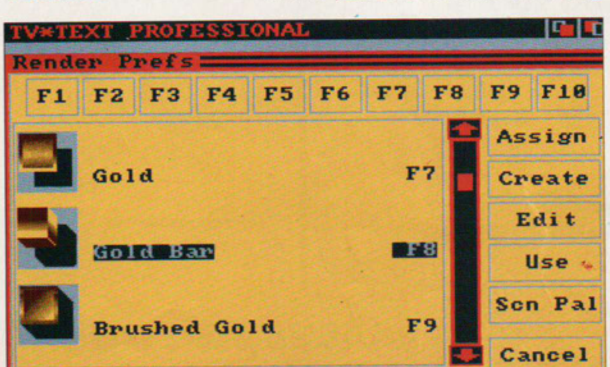
specification have increased: you will need at least a megabyte even to get started with the program.

Screen Modes

Unlike its predeccesor, *TV*Text Pro* supports all Amiga screen resolutions and virtually all Amiga screen modes (excluding HAM). For most titling work you'll probably want to work in high resolution, but if memory constraints get the better of you *TV*Text Pro* also supports low resolution (with up to 64 colours), low resolution interlaced and medium resolution (with up to 16 colours). Although *TV*Text Pro* allows the use of non-interlaced screen modes, these screens can be interlaced at anytime for improved transportation to video tape.

The Amiga's ability to produce overscanned (borderless) screens is one of the main reasons why the machine has been so successful within the video industry. Any video software that does not support it is looked upon as nothing more than an ameteur toy. Not wishing to disappoint, *TV*Text Pro* supports two degrees of overscan – medium and maximum. A medium overscanned screen will remove a large percentage of the border that normally exists around an Amiga screen. On the other hand, a maximum overscanned screen has virtually no border, making what you see appear to fill the entire display.

BELOW: Choose the text rendering style from the Prefs requester.



Fonts

Any video titling package is only as good as the fonts that can be used with it. Zuma have been producing quality fonts for the Amiga for many years now, so it would be a big surprise if *TV*Text Pro* was let down in this department. Thankfully this is most certainly not the case, as the package comes complete with three disks crammed with fonts of varying sizes (ranging from 8 point, right up to a massive 102 point) and styles.

Even if you grow bored with the collection of fonts that Zuma provide, *TV*Text Pro* will happily accept any standard Amiga bitmapped fonts (including colour fonts!) such as those which are to be found on your Workbench and Extras 1.3 disks.

This is one particular area of desktop video where the Amiga really shines – if you buy a professional video titler, obtaining extra fonts is a costly affair. With the Amiga, all you have to do to source new fonts is to either use the Workbench FED tool to produce new ones, or have a quick chat with your friendly PD supplier. For little more than the cost of a couple of disks, your collection of fonts could multiply considerably.

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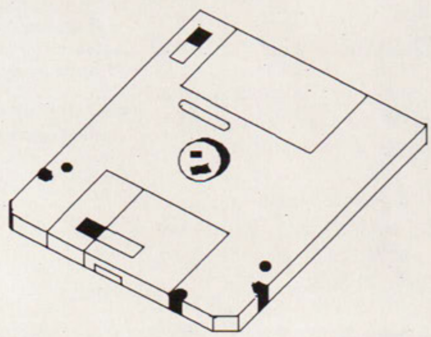
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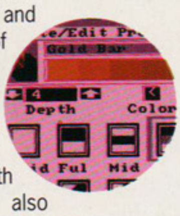
Rendering Effects

*TV*Text Pro's* strength lies in its impressive text rendering facilities. Unless you're lucky enough to have a large collection of colour fonts, standard mono Amiga fonts can look a little dull. However, with *TV*Text Pro* you don't need to use colour fonts to produce good-looking multi-colour text, because the program includes a powerful effects generator that allows any mono font to be displayed on screen using a variety of different rendering styles and effects.

Using the rendering effects is simplicity itself. All you have to do is to choose the rendering effect required, type in your text and *TV*Text Pro* does the rest. However, unlike similar programs, text is not typed straight onto the screen. Instead, *TV*Text Pro* uses a separate text-entry window that is used to enter text a line at a time. Once you've entered the text to be used, pressing return activates the rendering process. Within a matter of seconds, your mono font is displayed in its multi-colour, rendered form. The text is treated as a brush that can be moved around and eventually pasted down using the mouse.

If the preset rendering effects aren't to your liking, then you can use *TV*Text Pro's* powerful effects editor to create your own from scratch or to modify existing effects. The editor itself is split into distinct pages. One page handles the rendering effects for the face of the text, and others handle the outline and shadow. Even the light source direction that dictates how a shadow is cast can be altered by clicking on one of eight light-bulb icons around the screen.

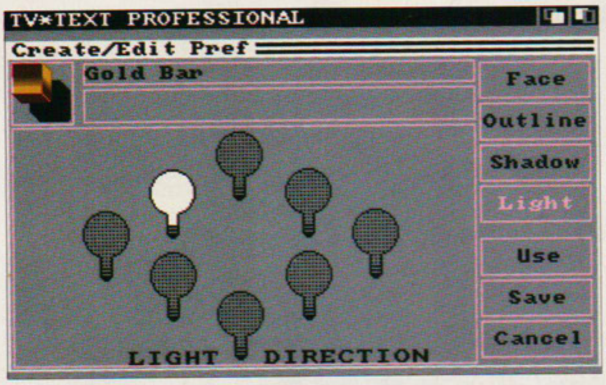
If you can think of a rendering effect that could be applied to text, chances are that *TV*Text* supports it. Outlines, strobes, extrusions and metallics are only a few of the effects supported.



Drawing Tools

With *TV*Text Pro,* video titling doesn't just stop with titles, as the program also includes an impressive list of object drawing tools. Objects such as circles and boxes can quickly and easily be created and pasted down using the same rendering effects available with text.

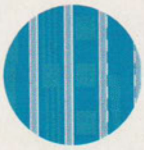
If you have any logos or pictures that you wish to use as a backdrop, *TV*Text Pro* will happily accept these. Because colour palettes are never the same between one picture and another, *TV*Text* includes a very powerful 'Auto-Color' facility that attempts to match the colour palette of your IFF file to the palette currently in use. Of course, this can be switched off and the colour palette from the imported IFF file will be used instead. *TV*Text Pro* not only reads



ABOVE: Altering the light source direction affects the direction in which the text shadow falls.

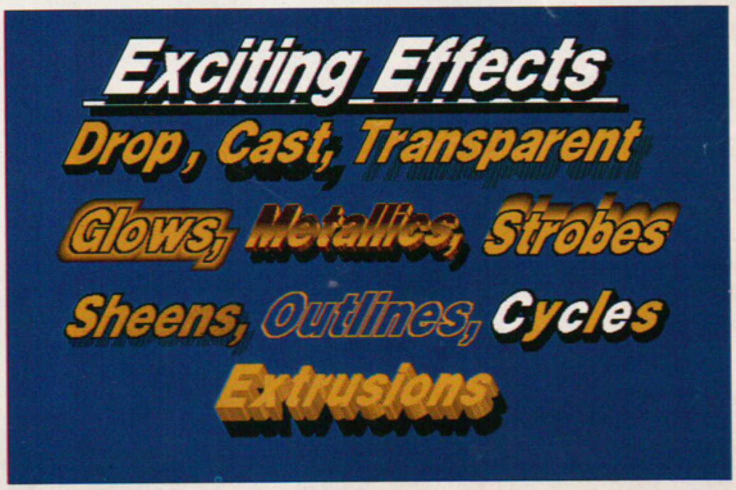


RIGHT: The brushed gold text rendering complete with a dithered background is particularly good.





RIGHT: *TV*Text Pro* comes complete with three disks filled with high-quality fonts.



RIGHT: Here are just a few of the effects that are possible with *TV*Text Professional.*



IFF files, but it will also write them. If you're happy with what you have produced and wish to use the screen with an external program, the current screen can be saved out as an IFF compatible file.

As well as using IFF pictures as backdrops, *TV*Text Pro* also includes a menu filled with options for creating attractive looking backdrops. Most immediate of these are the dithering options, but the program also allows you to use text or brushes to create wallpaper or tiled effects.

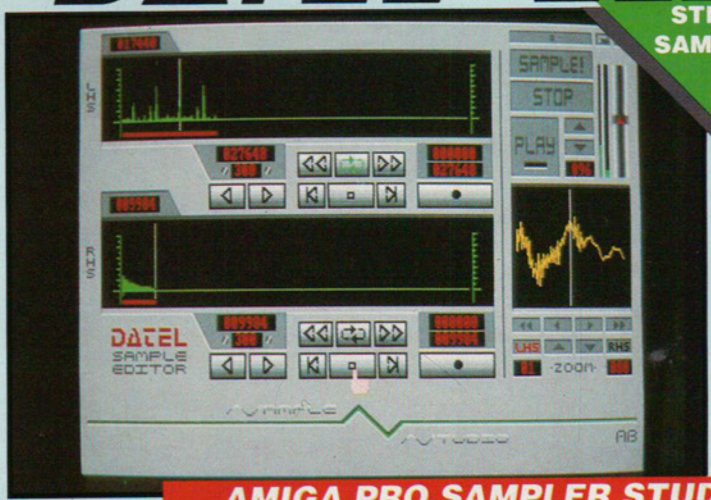
Conclusion

*TV*Text Professional* is undoubtedly a powerful program, but I just couldn't help wondering what it could do that couldn't also be achieved within a quality paint package such as *Deluxe Paint 3.* Now that *DPaint* offers fully overscanned display options, support for colour fonts and more powerful conventional font handling, there is no real reason why any display put together within *TV*Text Professional* couldn't be knocked up just as quickly in *DPaint 3.*

The advantage of *TV*Text Pro* is that it requires no artistic talent from the user as most of the work is carried out for you. If you try to carry out a similar task using *DPaint,* you're going to need to be a dab hand with the pixels to produce results that even come close to those obtainable from Zuma's package. With *TV*Text Professional,* anyone can now produce professional-looking video titles with considerable ease.

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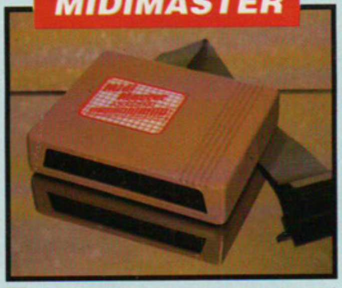
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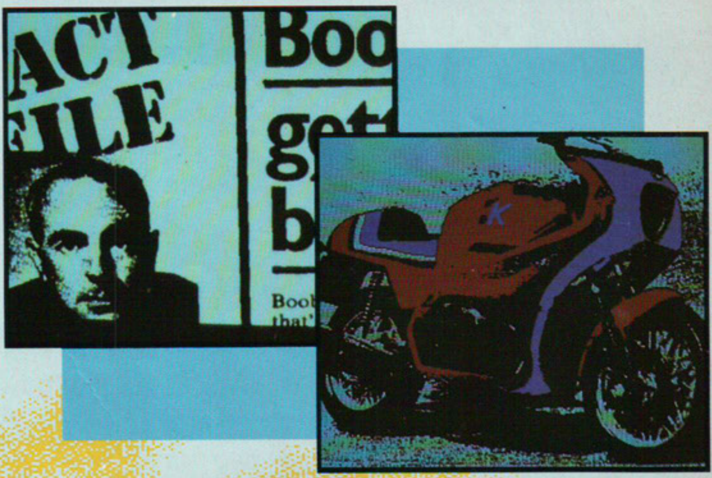


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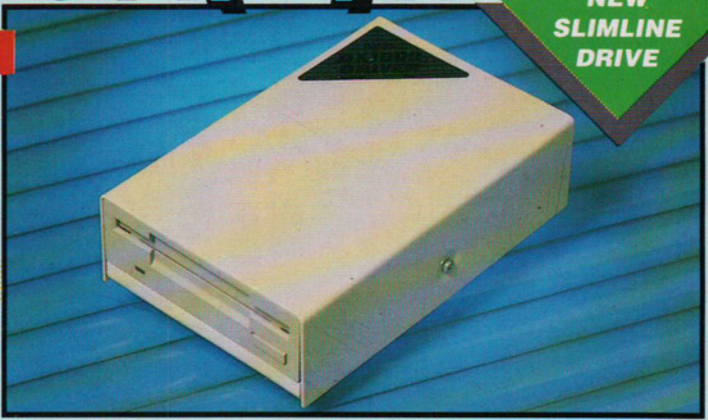
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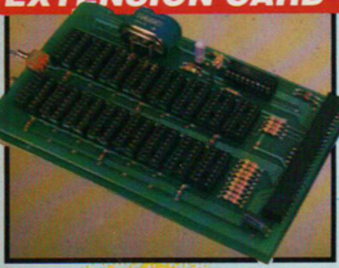
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THE WHOLE TRUTH ABOUT games programming PART 4





aliens

DAVE JONES, the ace coder behind Psygnosis' hits *Menace* and *Blood Money*, spills more secrets.

In this and next month's articles I will detail the largest part of the *Menace* code: namely, the alien movement and control routines. There will be no source with this month's instalment because I will only be describing WHAT the routines accomplish – next month will cover HOW they are accomplished, along with the source.

Movement is Life

So, we want to have aliens flying about the screen in nice patterns, attacking your ship, launching missiles at you, tracking your movements and doing all the other things that aliens do best. All the basic ingredients of a good shoot-em-up. What should spring to mind to control all of the movements is a decent data structure. As I have said before, there is no substitute for sitting down with a pen and paper and having a good think about what has to be accomplished. The best idea is to start off with the basic data that would have to be stored about an alien flying about on screen. This would probably be the following:

Alien number
Alien X coordinate
Alien Y coordinate
Alien speed

There will also have to be some way of telling the alien what to do. The simplest form would be a coordinate for it to move to. Once it gets there it would need another coordinate to go to. It would do this repeatedly until we tell it to stop, or until is has been destroyed. First, then, we will define the basic structure to describe a particular alien

```
            rsreset         ; reset the rs counter
X.Pos       rs.w    1       ; one word for the alien's x coord
Y.Pos       rs.w    1       ; one word for the alien's y coord
Sprite.Num  rs.b    1       ; a byte to hold the alien number
Speed       rs.b    1       ; a byte to hold the alien speed
```

Following this in memory would be a table of x,y coordinates for the alien tc move to in sequence. An example piece of source that moves an alien from left to right and back again could be defined as follows:

```
dc.w=  0,100                  ; start alien at x=0, y=100
dc.b   6,2                    ; use alien number 6 with a speed of 2

dc.w   320,100,0,100,$7fff    ; move to 320,100 then to 0,100
                              ; the $7fff is an end marker
```

This basic structure will provide only limited control of an alien, so it's time to add a few more features. Most of the aliens are animated (Figure One, overleaf, shows an eight-animation *Menace* alien) so as well as defining the alien number, we also have to define its current animation number. Note that in games an animated object is usually given a number that relates simply to the base address of that alien. The number of animations it actually has is stored separately. This makes changing the number of animation frames very simple, because the alien numbers all remain exactly the same. So we will also have to store the number of animations the alien contains somewhere in the structure as well as its current animation number:

```
Anim.Num    rs.b   1     ; a byte to hold the current animation
Num.Anims   rs.b   1     ; a byte to hold the maximum anims
```

The basic idea, then, is that for each game cycle we increment the

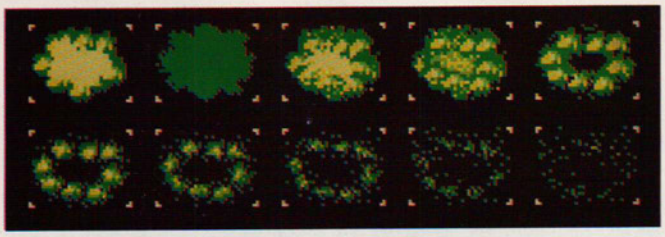


FIGURE ONE: AN EIGHT-ANIMATION *MENACE* ALIEN

Anim.Num (0,1,2,3,... etc) until it hits the value in Num_Anims when we would reset it back to zero. Straight away a small problem crops up in that we may not want to animate an alien every game cycle (1/25th of a second for *Menace*). In fact very few of the aliens animate every game cycle as this is a little fast, so we will also have to introduce an animation delay into the structure:

```
Anim_Delay      rs.b 1      ; a byte to hold the animation delay
```

The method of incrementing the Anin.Num until it hits a maximum then resetting it to zero is termed a WRAP animation as it wraps around to zero. In some cases we may want the animation numbers to increase to a maximum and then decrease to zero: this is termed an UPDOWN animation. To indicate whether or not to use a wrap or updown type of animation requires us to store a single bit of information. There are many occasions in the controlling of an alien that only requires a simple on/off definition. These tend to be grouped together in the data structure and called a MODE word or byte. This is simply a collection of bits used for general-purpose description of simple on/off controls. This is now added to the structure:

```
Mode        rs.b 1          ; single byte to hold eight flags

UpDownequ   1<<3            ; define the updown flag as bit 3
```

Note the equate of which bit in the control byte reflects the animation type. NEVER use 'magic numbers' in your source such as the statement

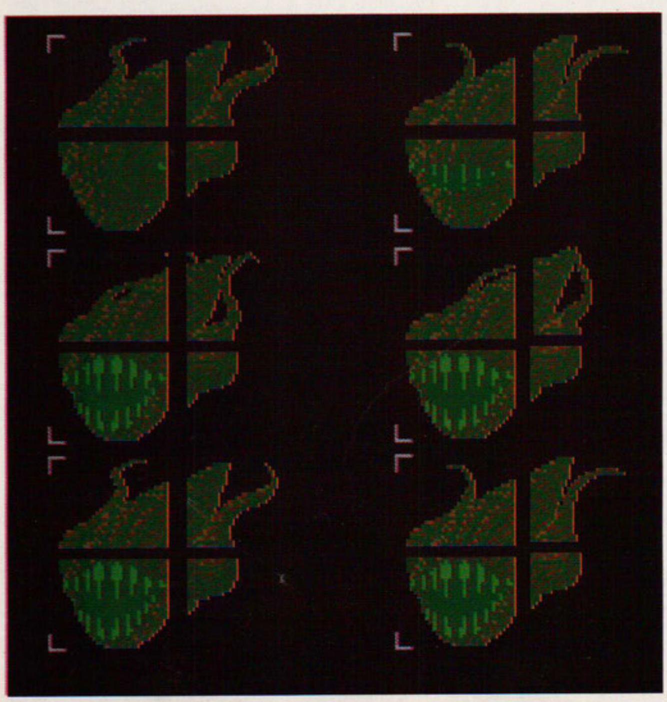
```
    btst    #3,Mode
```

This in no way tells you what bit 3 signifies: you may remember as you are working on the project, but what about in a year's time when you come back to re-use some of this source? The above should have been written as

```
    btst    #UpDown,Mode
```

which is very clear and has the advantage that to change the actual bit number that the UpDown flag is set at requires only the EQU statement above to be changed. Always make the assembler do as much work for you as possible. Right, lecture mode OFF, let's introduce the next element into the structure.

FIGURE TWO: FOUR SPRITES MAKE ONE LARGE SPRITE



Reason for Living is Dying

Most aliens' sole purpose for existing in a shoot-em-up is to be blasted. Do we want them to die after being hit once, though? For most, I think not. We will have to introduce a variable to define how many times we can fill an alien with laser shot before it explodes:

```
Hits_Num rs.b     1         ; number of shots an alien can take
                            ; $ff for infinite
```

As you can see a certain value has been introduced that makes some aliens indestructible. This is not used very often but is handy, say for some asteroids tumbling across the screen that you simply have to dodge and cannot destroy (anybody who reached Level 6 of *Menace* will know exactly what I mean!)

As far as describing the alien, that is about it. I have made no mention of the size of the alien in the structure as in *Menace* all aliens were 32 x 24 pixels in size. To make larger ones simply meant moving a few about as though they were joined together (see Figure Two). It certainly makes life simpler handling only one size of alien, though you do lose out a little on flexibility.

Back to Motion

Now back to the movement of the aliens. The basic GOTO command was implemented simply by defining pairs of x,y coordinates for the aliens to head for – they continued until they were destroyed or until a special coordinate value told them to stop.

This is very inflexible for performing, say, a small circle movement. We would have to define goto points for many points on the circumference of the circle. This may take quite a while to work out, and would have to be recalculated for any other aliens at different x,y coordinates on the screen that wanted to perform a similiar circle.

One simple way of overcoming this problem is to use a relative coordinate system whereby rather than interpreting the x,y values as goto coordinates, they are simply offsets that are added to the present x,y coordinate. This allows us to define a shape as a set of offsets from a base point, the base point being arbitary. This should be able to be used in conjuction with the goto points so we can switch freely between absolute and relative movement at any time.

It is apparent that some form of control data has to be added into the coordinate list to switch between relative and absolute or one may be mistaken for the other. What basically happens in *Menace* is that movement always starts off in absolute mode, but at any time we can switch to and from relative mode by making one of the coordinate values a control word. For example to goto the middle of the screen, then move in a triangle shape, then return again may look something like:

```
    dc.w  160,100           ; goto 160,100
    dc.w  OffsetMode        ; switch to offset mode
    dc.w  2,2               ; move 2 along and 2 down a few times
    dc.w  2,2
    dc.w  2,2
    dc.w  –2,0              ; move 2 back a few time
    dc.w  –2,0
    dc.w  –2,0
    dc.w  2,-2              ; move 2 along and 2 up a few times
    dc.w  2,-2
    dc.w  2,-2
    dc.w  OffsetMode        ; toggle back to absolute mode
    dc.w  0,100             ; back to the start x,y
```

Control words have certain bits set that distinguish them from a goto coordinate (not much point in, say, having 32768 as a coordinate with a screen width of 352 pixels). What we end up with is a small language that describes the path aliens follow. We can go on adding control features

that make the path data more compact yet more powerful. The offset mode will set a bit in the MODE byte to indicate when it is in offset mode.

Memory Economy

To cut down the amount of data required to describe a complex path (like a large ellipse formed from offsets) it would be ideal to be able to branch to some other path data, and then return after executing so many of its commands. The triangle path above, for instance, requires 40 bytes for the offset data. If we required 12 aliens to perform the triangle movement, but at different coordinates on the screen, we only want to define the offset data once, and have the rest of the aliens branch off to that data inbetween executing their own path data. Menace has a GOSUB command in the path data for this purpose. The gosub command passes over to the new offset data, then at the end of the data is the equivalent of a RETURN command which returns control back to original path data. The above could be written as:

```
        dc.w    160,100             ; goto 160,100
        dc.w    Gosub,Newpath-*     ; branch to some new data
        dc.w    0,100               ; back to the start x,y


Newdata dc.w    OffsetMode  ; switch to offset mode
        dc.w    2,2         ; move 2 along and 2 down a few times
        dc.w    2,2
        dc.w    2,2
        dc.w    -2,0        ; move 2 back a few times
        dc.w    -2,0
        dc.w    -2,0
        dc.w    2,-2        ; move 2 along and 2 up a few times
        dc.w    2,-2
        dc.w    2,-2
        dc.w    OffsetMode  ; toggle back to absolute mode
        dc.w    Return
```

If we had 12 similar paths to the above the memory required would now be drastically reduced.

More Memory Economy

Another useful memory saver is a FOR type contruct that allows any part of the path data to be repeated a set number of times. Imagine trying to move a series of aliens in a 'stepping' motion whereby they move, say, along 16 pixels then down 16 pixels, achieved by:

```
    dc.w OffsetMode
    dc.w 4,0
    dc.w 4,0
    dc.w 4,0
    dc.w 4,0
    dc.w 0,4
    dc.w 0,4
    dc.w 0,4
    dc.w 0,4
```

The above performs one step, but if we wanted to repeat this 10 times, it would normally mean repeating the data 10 times or using many GOTO statements – but, yes you've guessed it, a loop function was implemented: simply appending the command

```
    dc.w DoLoop
```

to the end of the data will cause the last xx bytes of path data to be repeated so many times. This caused two new items to be added to the alien structure, namely

```
Loop_Offset     rs.b 1      ; the number of bytes to loop back
Loop_Count      rs.b 1      ; how many loops to perform
```

This limits the loop command to only allowing one size of loop in each individual path, although this restriction was not noticed as multiple loops were never required.

Other Tweaks

A PAUSE function was added that allowed an alien to pause at a specific point for any length of time. A simple function but used quite often:

```
    dc.w Pause,PauseValue ; the Pause value is in 1/25 seconds
```

A SEEK mode was added that allowed an alien, at any time, to start to track your ship and try to collide with it to reduce your shield. This is worked similarly to the pause function with a count specifying how long to seek your ship before carrying on with the rest of the path data:

```
    dc.w Seek,SeekCount       ; seek ship for 1/25 * SeekCount secs.
```

Related to the seek command above is the FIRESEEK command which allowed one alien to start another path. This was used to allow aliens to fire missiles that used the seek mode:

```
    dc.w FireSeek,SeekCount ; start a seek path from this alien
```

To finish off the command set some additional simple commands that came in useful were added. These are:

ChangeSprite – allowed you to change the sprite number at any time. Useful for transforming aliens into other types.

ChangeSpeed – quite obvious this one. Slow moving sprites can be given a quick turbo boost to attack the ship.

ChangeAnim – allows manual changing of the animation number. Used to mimick, say, turning a corner at any point on the screen

And that, basically, is that. Table 1, below, lists the full data structure for an alien path. Hopefully you can see the benefit of designing such a control system for moving objects about. It need not necessarily only be used in a shoot-em-up style game but can relate to many styles of game. It soon becomes quite simple to add more powerful commands to the code, which results in the code being useful in many more projects.

Now you know what the commands do – next month I will present the source and explain how they are accomplished.

TABLE 1
FULL DATA STRUCTURE

```
    rsreset
Next.Path       RS.W    1   offset to the next path
X.Pos           RS.W    1   current x position
Y.Pos           RS.W    1   current y position
Kills.What      RS.W    1   kills others aliens if dead (0-11)
Table.Offset    RS.W    1   the current table offset
Sprite.Num      RS.B    1   sprite number
Anim.Num        RS.B    1   animation number
Anim.Delay      RS.B    1   delay in 1/25th secs, dynamic copy
Anim.Delay2     RS.B    1   static copy to refresh the above
Speed           RS.B    1   speed in pixels
Pause.Count     RS.B    1   dynamic pause counter
Mode            RS.B    1   flags, see bleow
Loop.Offset     RS.B    1   loop offset in bytes (-ve)
Loop.Count      RS.B    1   dynamic loop count
Hits.Num        RS.B    1   number of hits to kill
Num.Anims       RS.B    1   number of animations
Seek.Count      RS.B    1   dynamic seek count
Table.Size      RS.B    0
```

* This is followed by x,y bytes to move to (always even) with command

* codes inserted to alter the control and movement.

```
*   Mode bits
    Offset.Mode     equ     1<<0    set when in offset mode
    Seek.Mode       equ     1<<1    set when in seek mode
    UpDown          equ     1<<3    set when updown
                                    animation
    AnimUpDown      equ     1<<4    set to animate up,
                                    reset down
    HeatSeekPath    equ     1<<5    set to signify a
                                    heatseeker
```

A SERIOUS Business

A SERIOUS BUSINESS

Part One: Databases



In the first instalment of a three-part series exploring home business software, **MARK SMIDDY** examines Amiga information storage.

ILLUSTRATION DANNY JENKINS

After word processors, the most common "serious" application – and the subject of this article – is the database. But what exactly is a database? By simple definition, a database is a program for storing information on disk, then retrieving some or all of the stored information at a later date. This simple idea can be extended to allow the user more control over exactly what information he or she retrieves according to specified rules.

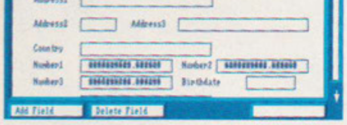
For instance, a small business's database might contain a list of customers' addresses. By simply setting the correct rules, an operator can display just those customers who live in the London and South East areas.

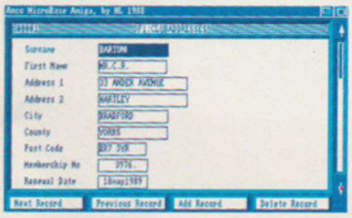
Amiga databases, thanks in part to the power of the machine and in part to the imagination of the designers, are not limited to such overtly trite examples. Many databases break new ground – like displaying pictures, playing sounds, even simulating a strip of microfilm – and with prices to suit all pockets, Amiga owners are spoilt for choice!

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For those on a budget there is only one choice, and although it comes from a company better known for their "adult" card games and one particularly infamous footy game it performs surprisingly well. Anco's *MicroBase* is a true entry-level database with an entry-level price of under £20. *MicroBase* is supplied on

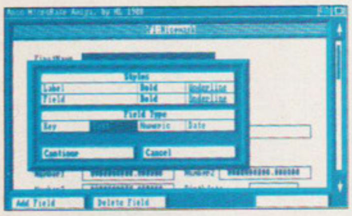




TOP: Editing a file in *MicroBase*. ABOVE: Creating a mask in *MicroBase*.

a single (protected!) disk and comes with probably the shortest manual ever supplied with any business software – at just 12 pages, almost anyone could manage to digest this.

The program is Intuition-based and runs in its own colourful (blue!) screen, but is not very suitable for multi-tasking due to the protection methods employed. Also absent is a "Quit" option. In its favour, *MicroBase* features simple indexing and simple sorting on text fields. It even has a powerful label printer and is fully compatible with Anco's budget word pro-

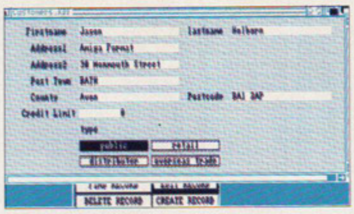


LEFT: Defining fields in *Microbase*.

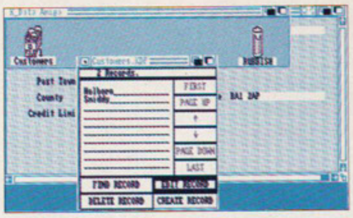
cessor, *MicroText*. It does nothing to rave over – but it is capable and solid. At the price, *MicroBase* is good value for money and an excellent introduction to databases.

K-DATA
Kuma £49.95

The next rung up the ladder from *MicroBase*, *K-Data* has features which nudge it into the semi-professional category even though it maintains a budget-level price. It has been around for some years now and is claimed to be the best-selling flat-card system for the Amiga.



NEAR RIGHT: Editing a record in *K-Data*.



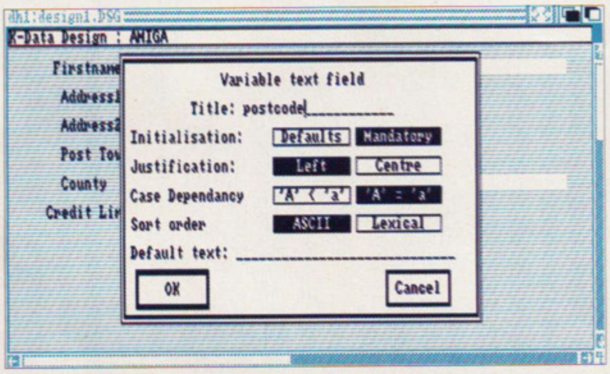
FAR RIGHT: The file index in *K-Data*.



RIGHT: The desktop view in *K-Data*.



Supplied on one disk, *K-Data* comes in two different versions – one for unexpanded A500s and an enhanced version for the larger machines. The main omission on the smaller version is a proper file request box. Recent releases, however, benefit from the inclusion of a standard ring-bound manual, which is a great improvement on Kuma's previous efforts.



BELOW : Designing a database in *KD-Design*.

The most notable feature of *K-Data* is its similarity to the ST's *GEM*, a hang-over that gives away its origins. This does not detract from the quality of the product which is generally good overall. To conserve memory, *K-Data* is split into two parts: a designer where the form layout and fields are defined; and the database which does all the donkey work.

When *K-Data* is run, it opens a small window on the Workbench screen. As each file is opened, it appears in the window as a drawer of filed cards. This can be viewed as a virtual desktop and, again, works just like *GEM* – the icons can be grouped and dropped in the trashcan, thereby closing the files.

At the same time, another window opens listing the records stored in the database according to their key field. This works just like a file requester: find the record to update/edit and double-click on it – simple. Up to four files can be open at one and the same time.

The main fault with *K-Data* is its constant insistence on redrawing and moving windows, which does tend to make the operation of the program slow. Otherwise it is stable enough to be usable under most conditions.

GLOSSARY OF TERMS

Append: Add information to the end of a database.

Case Sensitive: Defines whether capital letters should be checked in a search. If case sensitivity is switched OFF the strings "ABC", "abc" and "AbC" all return the same result.

Create: Design a new database.

Data: Information which is stored by database software.

Database: A set of one or more records. *See Record.*

Delimiter: A special (user-defined) character used during importing and exporting to define the start and end of fields and records. *See Import and Export.* Also used to mark fields for mail merging.

Export: Output information from the database in an alien format (usually ASCII) so it can be read by other software). *See Import.*

Field: An area in which to enter a single item of information.

Field Name: Used during data entry and rule searching to identify a field. For instance: Address1 or FirstName.

Filter: Locating one or more records in a database according to a set of user-defined rules. *See Relational Operator.*

Fixed Length Data: Set of data stored using a fixed amount of disk space. Sacrifices compactness of storage for speed. *See Variable Length Data.*

Fixed Length Record: A record containing a fixed number of fields. *See Variable Length record.*

Flat Card Database: Simple database containing information on separate sheets – like a Cardex. These are suitable for many applications.

Form: Refers to the way some databases allow users to "paint" a design for a form layout. This could be an address label, for instance.

Import: Read information output from another program. *See Export.*

Index: Special file created by a database to allow swift, random access to all records. A database file can have many indexes "attached" to it.

Key Field: Another name for an Index field.

Quote Wrapped: A method used to store exported ASCII data to delimit fields within records. *See Delimiter.*

Record: A set of one or more fields. *See Field.*

Relational Database: A complex database where fields in one file can have an effect on fields in another. Records are said to relate to one another. This only applies to the more expensive systems.

Relational Operator: An operator defining part of a rule – Typical operators are: = (is equal to); <> (does not equal); >= (is greater than or equal to).

Rule Searching: *See Filters.*

Update: Add or delete records – or just change information – stored in the database.

Variable Length Data: Data stored using the minimum amount of disk space. Saves space at the cost of poor speed. *See Fixed Length Data.*

Variable Length Record: A record with an unknown number of fields. *See Fixed Length Record.*

Virtual Memory: Area of hard or floppy disk used as a buffer. This allows the size of a database to be limited to only by the amount of on-line disk storage. Not all databases support this particular feature.

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SuperPic PC – Includes IBM interface card and UHF TV framestore output. The framestore system means that even non-VGA PC users can save and recall colour images. Software to produce 256 colour VGA images from a palette of 256,000 and write GIF, PCX and custom format files.
Recommended retail price **£520.87** (£599 inc. VAT).

ColourPic Amiga – Similar specification to SuperPic Amiga, without genlock but includes UHF TV output.
Recommended retail price **£433.92** (£499 inc. VAT).

SuperPic, SuperPic PC and **ColourPic** can be obtained from your Amiga/PC dealer or for UK orders only send your cheque (including VAT) made out to JCL Business Systems and your digitiser will be shipped FOC by courier within two days (subject to availability). State model required. For orders outside UK please phone or FAX for details.

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GRAPHIC UTILITY (GRABBER): Gets almost any screen out of a game. Numerous adjustments can be implemented for PLAYFIELDS: 1 to 6 BITPLANES are selectable, MODULO 0 and MODULO1, DISPLAY DATA FETCH START and DISPLAY DATA FETCH. STOP are adjustable independently. All GRAPHIC MODES : e.g. LOW-RES, HI-RES, INTERFACE, DUAL PLAYFIELDS, HOLD AND MODIFY. Save GRAPHICS in IFF format. HARDCOPY (screen dump) in B/W on 9 pin parallel printers. TRANSFER in IFF format to other GRAPHIC TOOLS, through which even full colour printing is possible. Also GRAPHIC VIEW with integrated SLIDE SHOW.

SOUND SCANNER: You can search through computer memory and hear the SOUND SAMPLES. Forward and backward options are available for REPLAY. Also a GRAPHIC SOUND EDITOR to customise portions of sound. ZOOM feature for exact cutting of sound. Sound samples are SAVED in standard IFF format, which is compatible with the popular software packages.

TRAINING MODE: You may SLOW DOWN most games to a STAND STILL. Automatically suppressed whilst working with the other cartridge functions

INTEGRATED SLIDE SHOW: Compile a disk of your favourite GRAPHICS and view them in the slide show of your own making, with automatic repeat and adjustable sequence of pictures.

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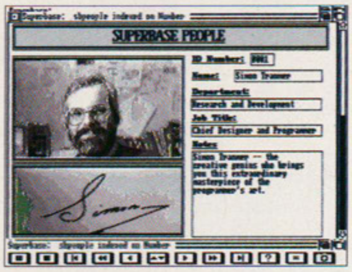
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SUPERBASE PERSONAL Precision £59.95



ABOVE: The designer of *Superbase* immortalised within the records of his own creation!

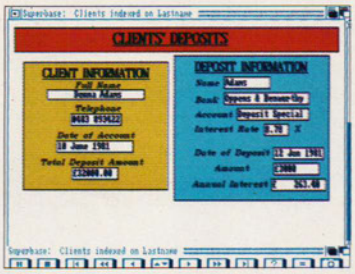
First in a set of three, this was the first database to use the revolutionary system of a control panel which resembles a video recorder. This not only allows the user to search through records very quickly, it is also a very easy system to learn. *Superbase* has the distinction of being the cheapest relational database described here. This mention of low cost should not be taken as judgement of the quality of *Superbase:* the price defies its power.

Unlike *K-Data,* the whole of *Superbase* is integrated into a single program which will run in 512K at a pinch, although it is more useable with 1Mb plus. Setting up the database is very simple once the plethora of options has been mastered; a task eased greatly by well-designed requesters. Four field types are available: text, numeric, date and external. Depending on the type these can be made required, calculated or validated according to a formula. External fields allow graphics and text files to be attached to the database – Superbase supports all Amiga IFF graphic modes including HAM.

Three separate modes are available for editing and viewing data: Record view displays the records as a list of fields; Form view allows fields to be "dragged" freely around the screen; and Table view displays the data horizontally with the field names heading each column. Editing is not possible in Table view.

Superbase's real power lies in its extensive reporting capability, which is unrivalled in this price bracket. The relational characteristics allow several databases to be opened at once and records combined to report to screen or printer. At a simpler level, single files can be filtered with ease through an extensive set of logical and relational operators and indexed records can be accessed almost instantly. Even a label printer has been included with the basic program.

The glaring fault with *Superbase* lies in its DOS interface. The directory (or disk) has to be set before summoning a file request. Worse still, this option is hidden on a different menu! Nevertheless, the program has become *de facto* the leading Amiga database in many respects.



ABOVE: *Superbase* hard at work with a typical record.

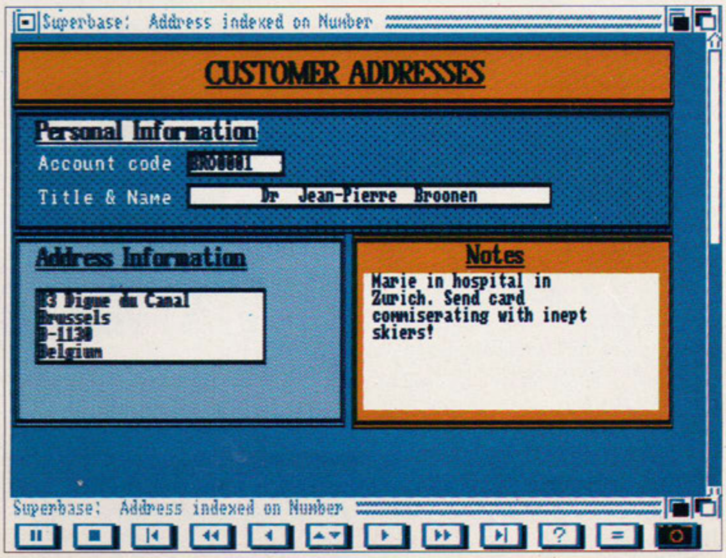
BELOW: *Superbase* in the process of editing a text file.





ABOVE: In the process fo editing field definitions in *Superbase.*

BELOW: The power of *Superbase* when it goes to work with forms!



WHAT'S IN A FIELD?

A field is a storage area for a single item of data like a name or a single line of an address. Several fields combine together to form each record on the database. Different packages support many different field types; most are common to all. Field types are specified when the database is set up. The three common types are:

ASCII or string: All databases support this basic type although some support added features like left and right justification and even case correction!

Numeric: These fields only support numbers – and in simpler packages, just integers (whole numbers). More comprehensive packages like *Prodata* and the *Superbase* range can perform calculations on the contents of such fields.

Date: This speaks for itself. The format of the date can usually be specified.

As already shown, there are many extensions to these basic types. As a rule of thumb, the more expensive packages include more options – although many of these are not necessary for the "average" user. Facilities such as "input validation" come in handy when there is a need to store numeric information such as prices. This helps avoid typing errors which could over or underprice items by checking for a reasonable value.

MICROfiCHE FILER £69.95

A brave attempt to take a database and make it as graphical and therefore as intuitive as possible. The idea is to locate records by scrolling a small magnification window over a larger sheet of "microfiche" – such as those found in libraries. When compared to traditional techniques, this concept seems strange initially but it soon becomes second nature.

Initially three windows are displayed: a small microfiche window; a larger display window where the records appear; and a list of "forms".



LEFT: *Microfiche Filer*'s address book.

MFF uses these forms to define how records are displayed, sorted and printed. The system permits a large degree of control over how much or little information appears in the fiche. It is possible to have a large number of display forms and swap between them very quickly.

Defining a database in *MFF* is tricky. Three field types are supported: text, numeric and picture. As with normal systems, the fields are named and typed first. However, before editing can commence an editing form must be defined. Each field is added individually, appearing in a small box which can contain either a reference name or the field itself. Field selection is made by clicking a small diamond located in the left of the box. Herein lies the problem: the sector diamond and associated resizing and movement gadgets are small and bunched together, making them difficult to hit.

Text fields can be expanded to any size within the constraints of a window. Picture fields import IFF files, but only support two- or four-colour images because *MFF* runs in the Workbench screen; extra bitplanes are removed resulting in some images becoming unintelligible.

Microfiche Filer is idiosyncratic in many ways. Nevertheless, its strengths far outweigh its weaknesses in most areas. This is an everyday database, tailored to simple jobs – fun to use and powerful enough for most home user tasks. Not one for the professional though.

A SERIOUS BUSINESS

BELOW: About the task of editing a record in *Microfiche Filer.*



DESIGNING DATABASES

This is where the utmost care must be taken. It is very important to ensure all the required fields are in place before entering the data. Adding new fields to records at a later date may be difficult or even impossible depending on the software. For this reason it is often a good idea to leave one or two empty text (known as wildcard) fields attached to each record to hold spurious data. It is also a good idea to test a layout for suitability before finally committing too much data to its tender mercies.

The physical design of a database will depend as much on the particular software concerned as on the application. Remember though – as in programming – there is a lot to be said for simplicity. Why bother including Date or Calculation fields in a record, if you don't need them, just because the software supports them?



RIGHT: *Prodata's* main menu options.

PRODATA
Arnor £99.95

Comes from the purveyors of the fine word processor *Protext*. Like *Protext*, *Prodata* is aimed at those users content with largely keyboard-based operations and is completely devoid of pop-down menus; Arnor seem happy with PC-like pop-up types. That said, it



RIGHT: Configuring one of *Prodata's* many possible options.

is the most powerful of the flat-card databases and has the professional feel, a comprehensive manual, and support for dozens of printers.

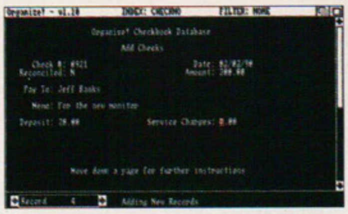
Setting up the database is simplicity itself, being much more traditional than most Amiga systems. Data types include numeric, text, date and integer and comprehensive input validation is available. When the fields have been defined, data entry is extremely straightforward.

The most powerful feature of *Prodata* is undoubtedly its expression evaluator. This allows filters and layouts to incorporate calculations and a very comprehensive set of tests, giving *Prodata* the clear edge over its rivals in this area. Also, layouts can be made "intelligent" allowing blank (that is, unused) fields to be eliminated – when using address labels, for instance.

Many users will find *Prodata* too "PC-ized" for their liking – but ex-PC users, and of course *Protext Amiga* owners, will feel at home. Import and Export can be tailored for *Protext* making mail merging very simple.

ORGANIZE 2
Microsystems Software
£99.95

Comes from the *Works* package – hence the apparently high price. Although *Organize 2* is yet another flat-card system it does have the added advantage of being able to import *dBASE III* database files, although it is not programmable. Also, as part of the *Works* pack it is



ABOVE: Adding new records in *Organize 2.*
BELOW: Creating a new database in *Organize 2.*

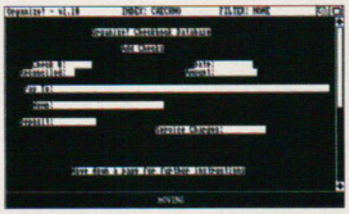
fully integrated with *Analyze 2* and *Scribble 2*, so data can easily be interchanged with these through the agency of the clipboard.

Four data types are supported: string, date, numeric and Boolean (yes or no). Numeric fields can be



either integer or fixed point format. Setting up the record format, therefore, is simplicity itself. When the record format has been defined the data can be entered directly without having to design a form first. If a form is required this is a simple matter of dragging the appropriate fields to the appropriate positions.

Index and filtering are rudimentary compared to, say, *Prodata* or *Superbase*, but this avoids confusion



ABOVE: Defining a form layout in *Organize 2.*

and the variations supplied are enough to cope with most situations. Simple calculations can be defined for numeric fields within the form layout; plus an option of accumulated figures. *Organize* is a safe option – simple to learn and easy to live with.

SUPERBASE PERSONAL 2
Precision
£99.95

This upgrade adds a comprehensive text editor and mail merge to the basic package as well as improved documentation – in a ring bound manual. *Superbase 2* also has better external file handling and a "dongle" for protection – a sad mark of the


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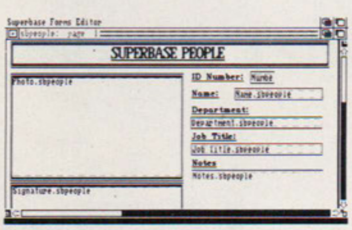
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times. Many other minor improvements have been made including limited support for *Lotus*, *dBASE* and DIF files. Essentially though, what applies to *Superbase Personal*, applies here too.

SUPERBASE PROFESSIONAL Precision £249.95

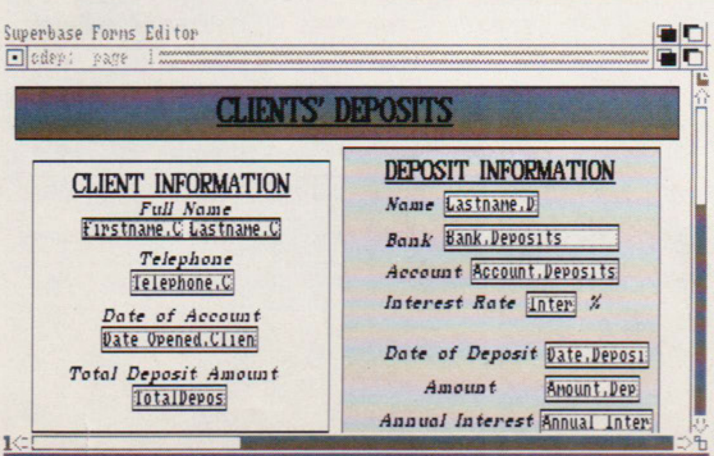
The ultimate solution in Precision's range for those who require the undoubted ease of use of *Superbase Personal* with the added facility of programmability. *Professional* is supplied on no less than three disks comprising: a Workbench disk, a set of examples and the forms editor. These are accompanied by two voluminous manuals and, like *Personal 2*, a "dongle" for protection. Even though *Professional* is awe-inspiring at first, the task of learning how to use it is greatly eased by the excellent documentation. It is not, however, intended for beginners.

The two features separating *Professional* from its competition are its programming language, which is relatively easy to learn, and the superb Forms editor. This object-oriented package is the key to producing anything from high-quality graphical reports to invoices and statements – imagination is the only limit. External files and graphics can easily be incorporated into the form, which can be tested within *Superbase* at any time during use.



ABOVE: *Superbase Professional's* forms editor in operation.

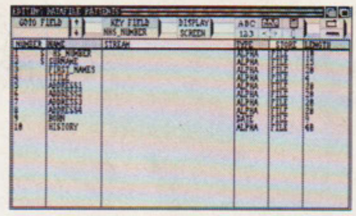
BELOW: *Superbase Professional's* forms editor once again.



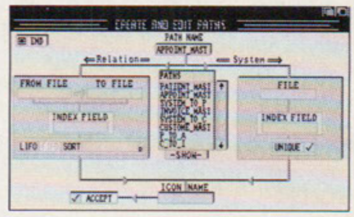
ACQUISITION 1.3 Taurus £249.95

The only serious competitor to *Superbase Professional.* Although having received much less publicity, *Acquisition* was written with the Amiga in mind and exploits, so the manufacturers claim, the full power of the machine. The package is supplied on three disks with a massive 350-page manual detailing how to get started with the system and an overview of the command language Acom. Beginners are directed towards a separate 200-page introduction to *Acquisition* which is sold separately.

At the heart of the system, Acom serves as a very powerful interface with the system. Commands are available to access the even low-level graphics functions – one of the supplied examples blits a Garfield around the screen, another draws a complex 3D plot. Some would say this is overkill but it shows how *Acquisition* can form the heart of a much more powerful system. Minimum system requirements are set at two disk drives and 512K – more realistically, 1Mb and hard disk.



LEFT: Setting the flow in *Acquisition 1.3.*

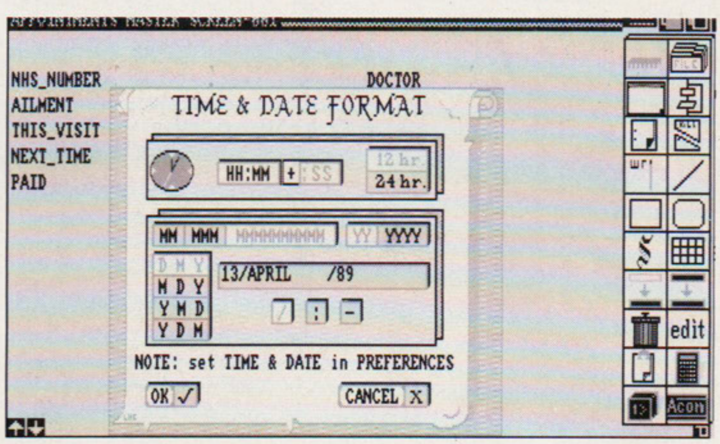


LEFT: Setting time and date in *Acquisition 1.3.*

Compared to *Superbase*, *Acquisition* is very difficult to get to grips with. Once the application (not necessarily a pure database) is running, however, it will prove the stronger of the two. The initial learning curve makes *Superbase* a more user-friendly option – but *Acquisition* is a strong competitor.

dBMAN V Versasoft $299 US

Finally vying for a place in the database stakes since Versasoft have managed to get it working in the Amiga environment. It has the distinction of being the only database available for the Amiga which can truly



BELOW: Creating a new file in *Acquisition 1.3.*

PASSWORD PROTECTION

For the small and occasional user, there is rarely a need for a password facility to protect the information contained in a database. However, passwords come into their own when several people need to use the same system. This can protect casual – and inexperienced – users from modifying or even reading important or sensitive material.

For instance, the person in charge of a system, the data manager, could set three passwords. The first would allow read access only – for the day-to-day operators; the second would also provide the ability to add new records – for the input clerks; the third, the ability to change data at will – reserved for the system manager only.

offer compatibility with *dBASE III Plus*. The portability of *dBASE* programs makes this an interesting option in itself, although *dBMAN* systems are available in their own right for the ST, UNIX, XENIX and even mainframes. Among the many enhancements, *dBMAN V* includes windowing support, a relational report writer and a compiler. At the time of writing, *dBMAN* is not available in the UK.

Conclusion...

For the first-time user, there is little to choose between the two leading budget packages, *MicroBase* and *K-Data*. *MicroBase*, being the cheaper of the two, has less features but does have a label printer. Conversely *K-Data* boasts better reporting and search facilities, and integrates completely with *K-Spread 2* (featured in 'A Serious Business' next month).

Slightly more upmarket, *Microfiche Filer's* unique graphical approach will find a niche with users appreciating totally intuitive operation. It falls down where large, complex databases are concerned because all records are limited by available memory. This price range also brings *Superbase Personal* into play at £10 cheaper. Although less intuitive than *Microfiche Filer*, *Superbase* is a pleasure to learn and very easy to use. Being fully relational, *Superbase Personal* is the most comprehensive of the budget systems.

The more professional user on a budget is guided towards *Superbase Personal 2* with its powerful text editor and perhaps *Prodata*. Although *Prodata* is the least "Amigaized" database, it will find a home with *Protext* users. In the same bracket is the *Works* bundle which contains the popular integrated system of *Scribble 2, Organize 2 and Analyze 2*.

The top end of the market sees two packages vying for a place. *Superbase Professional*, the high-powered (and high-profile) upgrade from *Superbase*, combines the smaller package's ease of use with the power of a forms editor and built-in language. The less well-known *Acquisition 1.3* is claimed to be more powerful but will take a lot longer to get to grips with. Both of these are aimed squarely at the the power market – however, only *Superbase* supports *dBase* files, which could be seen by some as a weakness.

The last option for dedicated power users is *dBMAN V* – ostensibly a *dBASE III Plus* clone. The strength of *dBMAN* is its portability with versions available for most 16-bit machines including the ST. It is by no means a beginner's database and should really only be purchased either as a run-time system or for serious database development work.

...And Advice

The problem of which package to go for must be resolved from two main considerations:

1) Is it easy to use? It is pointless buying an "all-singing" package with a programming language if the person using it has no idea how to program?

2) Is it affordable? This will depend on individual resources. However, it is pointless saving money by buying a package incapable of the job demanded. Conversely, it is unwise to spend more money than need be.

These points apply to all software and especially that in the business sector. Make sure the application is completely understood before searching for software to ease the task.

Data Protection Act

Since 1984 it has been illegal to hold information on computer files without first registering as a computer data user: and this includes straightforward data such as people's names and addresses. If you intend holding any information of this kind you must register with the Data Protection Registrar. Application forms and further information are available from main Post Offices. ■

IS INTEGRATION NECESSARY?

Several databases are available for the Amiga, but not all of them can easily exchange data with other productivity software such as word processors and spreadsheets. Many can import and export information as ASCII, but very few can claim to be truly integrated. The question which must be posed is this: does the application require data to be exchanged regularly?

For instance: a computer club may want to send out monthly newsletter to all its members. Or, a computer dealer may need to incorporate data from both accounts and database files to send out monthly statements. Both examples require a mail merging facility – which could prove difficult (or impossible) to implement between packages produced by different software houses.

Some packages, *Superbase Professional* and *Acquisition* for instance, incorporate a text editor, thereby completely avoiding the problem – but the privilege certainly costs extra.

A SERIOUS BUSINESS SUPPLIERS

Thanks to the following suppliers:
Amiga Centre Scotland: 031-557-4242 (*Acquisition & MFF*)
Anco Software: 0322-92513 (*MicroBase*)
Arnor: 0733-68909 (*ProData*)
CHIPS: 0642 219139 (*The Works*)
Kuma Computers: 0734-844335 (*K-Data*)
Precision Software: 01-330-7166 (*Superbase series/ARexx*)
NovoPlan Gmbh: 010-4929-528080 (*dBMAN V*)

QUICKVIEW
PRODUCTS LISTED IN APPROXIMATE PRICE ORDER

Product:	Field Size	Max Fields	Max Records	Max Filesize	Max Open	Max Indexes	Filters	GFX	Snd	R	P	F	Supplier	Price:
MicroBase:	System	System	System	System	1	1	No	No	No	No	No	–*-	Anco	£19.95
K-Data:	1638 bytes	N/A	Disk	Disk	2-4	1	Yes	No	No	No	No	–*-	Kuma	£49.95
S'base Pers:	255 bytes	System	16 Million	Disk	System	999	Yes	Yes	No	Yes	No	–*-	Precision	£59.95
Microfiche Filer:	System	System	*1	System	1	1	Yes	Yes	No	No	No	–*-	Software Visions	£69.95
Prodata:	100 bytes	300	Disk	Disk	1	5	Yes	No	No	No	No	–*-	Arnor	£99.95
Organize:	254 bytes	128	4.2 Billion	N/A	1	1	Yes	No	No	No	No	–*-	Micro Systems	£99.95
S'base Pers 2:	255 bytes	System	16 Million	17 Gigabytes	System	999	Yes	Yes	Yes	Yes	No	–*-	Precision	£99.95
S'base Pro:	255 bytes	System	16 Million	17 Gigabytes	System	999	Yes	Yes	Yes	Yes	Yes	<200	Precision	£249.95
Acquisition 1.3:	10 Mb	10 Million	100 Million	1 Gigabyte	System	N/A	Yes	Yes	Yes	Yes	Yes	>200	Tarus Impex	£249.95
dBMan V:	*2	128	2 Billion	N/A	10	System	Yes	No	No	Yes	Yes	>320	Verasoft Corp.	$299.00

Notes:
System: No internal restrictions – limited by memory available
Disk: Limited by disk space available (more on hard disks)
*1: 512K 200-400; 1.5Mb 2000-3000 address type records. Uses full 8Mb
*2: 254 bytes for text fields; 64K for memo fields
–*- Does not apply

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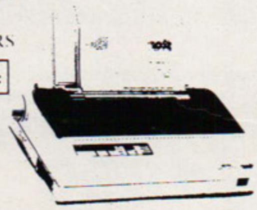
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ON YOUR DISK

HAMMERFIST

Knockout arcade action in Vivid Image's superb playable demo of their cyber-punk game. Turn the volume up and start hammering the opposition. This is a journey into the surreal...

WIPE OUT

A hilarious intergalactic hoverboard challenge awaits you in Gonzo Games' fantastically addictive playable demo. Sun, sea, and surf – on a planet with no atmosphere...?

BIRDS SAMPLER

RGB Studios bring you a taster of *The Birds,* the next Real Things animation pack, with the animation 'Storks in Flight'. Everything you need to create your own *DPaint III* animations.

POINTER ANIMATOR

Time to get rid of the Amiga's boring arrow pointer. Make your pointer move like you've never seen it before - change it into a flag fluttering in the wind, a swimming fish, or perhaps even an ever-undulating nose...

KEYBIZ

Government research indicates that the creativity index and lucidity factor of journalists, writers, and scribes in general shows a remarkable improvement when *Keybiz* is running.

MEGA WB

Expand your Workbench work area to beyond your wildest dreams – well, to the limit of available memory. You're gonna have a ball moving windows and icons outside the standard screen.

GAME BUSTERS

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BACK UP YOUR COVERDISK IMMEDIATELY

DON'T KNOW HOW? SEE P 108 FAST! ENSURE YOU WRITE-PROTECT YOUR DISK BEFORE USE!

disk EXTRA







Where else can you get a magazine and a disk containing almost 900K of programs for under £3? RICHARD MONTEIRO guides you through the Coverdisk's stunning offerings.

HAMMERFIST

PROGRAM: VIVID IMAGE
FILES: HAMMERFIST, HAMMERFIST.DOC, DEMO.CODE

When two hearts beat as one – especially two robotic hearts – you know you're in for trouble. Hammerfist and Metalisis were two ordinary fun-loving cyberdroids until someone decided to cut back on expenditure.

The logic went like this: two bodies, many similar bits, remove the duplicate items, save lots of dosh... the cutbacks went a little too far. The results of which mean that only one or the other of the robots can exist at any instance, instant transmutation from one body to the other being the only way to flip between personalities.

This co-existence, verging on non-existence, really got up Hammerfist's and Metalisis' shared nose. As you can imagine, they are both mad as hell – although, obviously, only one of them can be mad as hell at any given time.

Trapped in the mechanical world that made them, Hammerfist and Metalisis are after blood and bolts. And only you can guide them towards success along their path of destruction.

There are numerous moves to be learnt, so listen up. For fighting moves hold down the joystick fire button and push the joystick in the required direction of attack. For directional moves simply push the joystick in the direction in which you actually want to go.



Don't let looks deceive you, they both pack a mighty punch.



Flic-flac, flic-flac, flic-flac. What will it be – heads or toes?

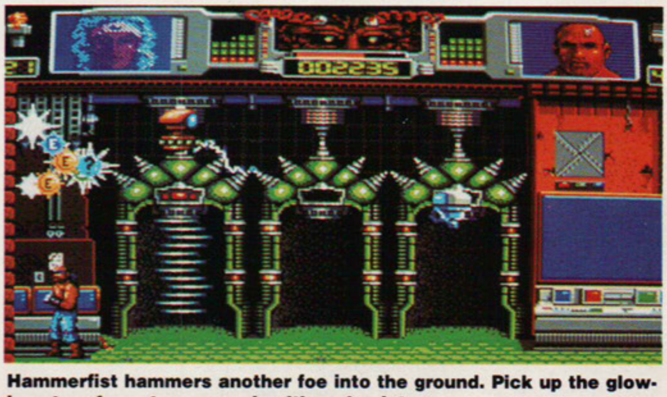
The following aggressive moves can be used when you're in control of Hammerfist:

- Punch forward – fire plus left or right.
- Punch up – fire plus up.
- Punch down – fire plus down.
- Piston fist – continue pushing left or right while punching.

Metalisis is no sweetheart either – she has the following moves available to her:

- Flic-flac while stationary – fire plus up.
- Flic-flac while running – fire.
- High flic-flac – continue pressing up while performing a flic-flac.
- Kick – fire plus left or right.

You can change characters simply by pushing up on the joystick. Pushing down will cause the character to duck. To turn into the screen press fire three times or hit the space bar. To head-butt (nice couple, aren't they?) or open doors hold the fire button and pull down



Hammerfist hammers another foe into the ground. Pick up the glowing stars for extra ammo, health and points.

on the stick. Step into an inset doorway by holding down fire and pushing up. Finally, you can select a weapon by ducking and pressing fire twice. Alternatively, press F1 for no weapon, F2 for piston fist and F3 for laser.

Other in-game keypresses you might be interested in include Esc to pause, Del to restart, F6 for music, F7 for sound effects and F8 for all sound off.

Getting Started

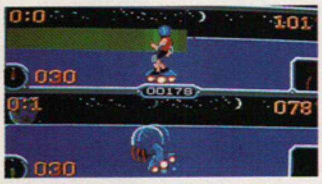
Hammerfist can only be run by resetting the computer and inserting the Coverdisk into the drive. A prompt will appear asking whether or not you wish to run *Hammerfist* – type Y and press Return if you wish to play the game. Pressing N will send you to the Coverdisk main menu. *Hammerfist* also appears as the first option (F1) in the main menu. You will only be able to run *Hammerfist* from here if your machine is blessed with 1Megabyte or more.

After a few seconds you'll be presented with the *Hammerfist* loading picture; press the joystick fire button to continue. From the *Hammerfist* main screen you can press Help to enter an option menu or fire on the joystick to start play. Please note, the joystick must be plugged into Port 2. You can change this from the option screen.

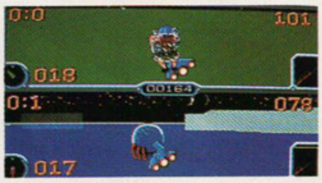


Overload the computer terminals (bottom right of the screen) to reach the rooms beyond.

When copying the game to another disk you will only be able to run it by starting a CLI, entering the *Hammerfist* drawer and typing 'Hammerfist' at the CLI prompt. There is no *Hammerfist* icon for you to click on from the Workbench – so unfortunately it won't work from there.



Cripes! Looks as if you're heading straight for a crystal wall...



Ha, ha, ha, ha! Wipe out! Dust yourself off ready for the next go.

WIPE OUT

PROGRAM: GONZO GAMES
FILES: WIPE OUT, WIPE OUT.DOC

It's just not easy to get very far in the rounds of the Intergalactic Hoverboard Challenge. You may laugh, but few Sapiens have reached the Hall of Fame. Training on water-based surfaces is no substitute for the real thrill of hoverboarding. While wind-surfing, skiing, skating and scree-riding are good for balance training, they are no preparation for the phenomenal speeds attainable on a hoverboard. Sapiens are not considered good contenders or to have the right temperament to take on the best at high hoverboard stages.

Of course there are exceptions – one in particular, a chap called Olbane Woldmunsey-Brickett III, caused a sensation many tournaments back by actually spelling his name in the wake left behind his board. A real crowd pleaser.

Don't be put off, but when you're up against things like Cyborgs, Archeoptra, Ameboids, Thermoids, Photonians, Mechanoids, you've got to be good. Damn good. Or even better.

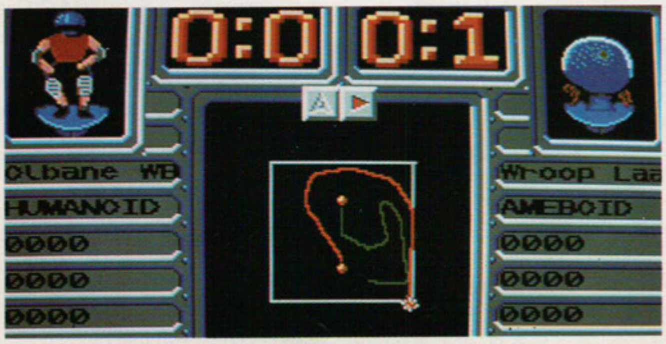
Anyway, welcome to the intergalactic hoverboard challenge. You're locked in an area against a hostile opponent. As you move around the area, you leave a crystallised wake behind you. So does your opponent. To win you must force your opponent to make a mistake. Likewise, your opponent will be looking to sink you. Contact with any wall is a big mistake. First one to wipe out loses. Hi ho – hoverboard away!

Getting Started

From the main menu press key F2 on the keyboard. After a short pause the game will start. If you wish, you can load *Wipe Out* from the Workbench. Enter the *Wipe Out* folder and double-click on the *Wipe Out* program icon to start.

Ensure there's a joystick plugged into Port 2 and use the following moves to get your hoverboard humming:

- Up – forward fast.
- Up and fire – forward even faster if turbo option fitted to board.
- Fire – jump.
- Left – slow left turn.
- Right – slow right turn.
- Diagonal left – fast left turn.
- Diagonal right – fast right turn.



After the match, you're shown the paths you both took.

BIRDS SAMPLER

PROGRAM: RGB STUDIOS
FILES: BIRDS_SAMPLER.DOC, 1_KEYPALETTE[16].PIC, 2_FLYINGSTORK{26.ABR, 3_SEA-CROSSING[16].PIC, 4_LANDSCENE{26.ABR

Before you go any further, do you have1Mbyte of RAM and *Deluxe Paint III*? No? Well then, this isn't for you, I'm afraid.

Perhaps you've done the 'amazing bouncing ball' tutorial in *DPIII*'s manual, and learnt your way around the paint-and-animate program doing that. Then what? Moving inanimate objects around the screen is fun. Zooming text is great. But true animation is about living, moving, animate creatures. That means you need a set of sequenced pictures, each one a little different from the next. The Real Things *Birds* sampler on the Coverdisk provides you with the means of producing stunning animated sequences.

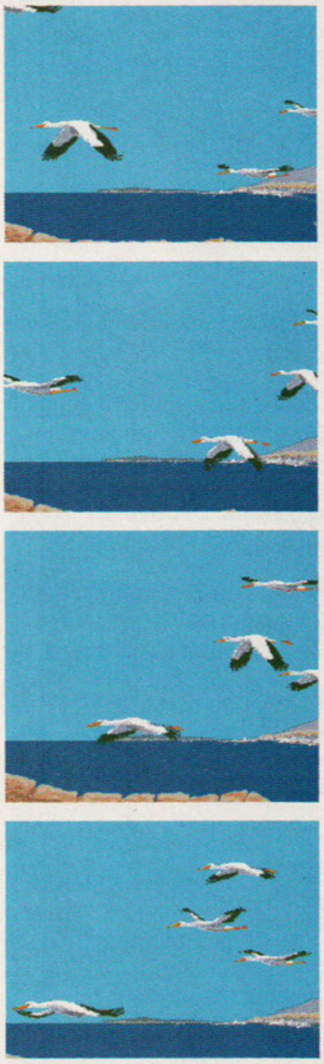
Do remember though, you need *Deluxe Paint III* to use the *Birds* sampler. If you own *DPIII*, you will know that 1Mbyte is necessary for animation.

Getting started

Follow these steps to make your own movies. Use the small sample kit of Real Things parts supplied in the BIRDS_SAMPLER drawer on the disk. You can't see the files from Workbench; they only show from the *DPIII* file requester.

1. Load DPIII. Set it to LoRes, 16 colours. Load 1_KEYPALETTE.PIC in your Pictures load requester.
2. Load 3_SEA-CROSSING.PIC, then open 60 frames from the Anim-frames requester.
3. Load 2_FLYINGSTORK.ABR via the Animbrush requester.
4. Place the stork just off screen to the left, about half-way up.
5. Open the Move requester (hit Shift M) and enter these numbers in the appropriate boxes: [X] –500, [Y] 20, [Z] –120, [COUNT] 60. Select the Move-to symbol. Click on Draw.

That's enough to get you started. A comprehensive help file called BIRDS_SAMPLER.DOC is contained in the BIRDS_SAMPLER drawer and will provide you with further information.



You too can create animations like this from the collection of bird parts to be found in the Real Things *Birds* sampler.

Pdom PD Amiga Public Domain and Shareware Software

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● **FFISH253** - Elements an interactive display of the periodic table.
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● **FFISH 188** - Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up.
● **FAUG 41** - Rain Bench, Amiga Arc V0.2 compatible with ARC V5.0.
● **AMICUS 22** - Printer Driver Generator V2.3. Show Print II.3 IFF screen dump.
● **FFISH 158** - DiskX sector editor, MSDOS V0.1 read MSDOS or ST format into RAM:.
● **FFISH 157** - XIcon V2.01 allows you to call up scripts containing CLI commands from an icon.
● **FFISH 131** - DFC is a disk copier that multi-tasks. Hyperbase V1.6 is a database system.
● **FFISH 58** - ASDG-rrd a RAM disk that survives reset. BigView displays any size IFF picture. EGraph creates graphs from X,Y pair text files. NewZap V3.0 disk sector editor.
● **FFISH 244** - BBChampion V3.1 the Boot Block Champion load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of up to 44 characters and the scrolling text of upto 300.
● **FAUG 67** - Disk X V2.0 the sector editor, Hand Shake V1.06b a VT100 terminal emulator, Pack It a whole disk compressor.
● **FAUG 62** - Access! V2.6 very powerful telecommunications package.
● **FAUG 50** - Dir Util V VI the disk manager.
● **APDC 18** - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Viruscheck, System Utils: Blitz V1.0 text editor, TimeSet, ACalc calculatorAmiga Monitor V1.1, MeM Grab fast memory grabber, DirectoryMaster V1.1
● **APDC 15** - Icon utilities: full of icon files and creators. Some animated!Brilliant disk for icon manipulation.

Graphics Disks

● **SOFT 013** - Mandelbrot Explorer. Excellent full features mandelbrot designer.
● **FAUG 42** - DBW Render a very good Ray Tracing utility.
● **SOFT 123** - Amiga MCAD V1.2.2 excellent Computer Aided Design package.
● **SOFT 022** - Disk Full of graphic utilities: Clip It! clip any part of the screen and save to disk, Filter Pics manipulate pictures with enhancers, edgedefinition, colour and size shifters: plus loads of excellent packages
● **APDC 13** - VDraw V1.19 brilliant painting program, Ray Tracer Generator, MCAD V1.2 an object-orientated drawing package, IFF to pieces jigsaw program, ROT 3D drawing program.
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Demo Disks

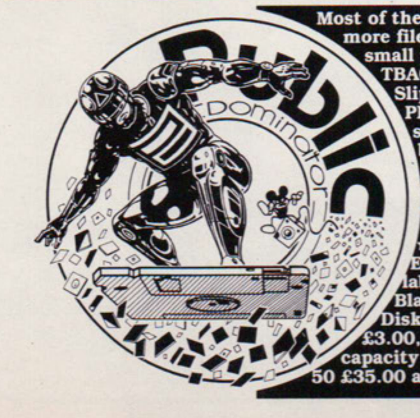
● **PDOM89** - AMOS the Amiga Games Creator Demo.
● **PDOM91 and PDOM 92** - Ghostbusters II demo by Hellbound, requires 2 disk drives and 1MB RAM! Great digitised pics and sound from the movie Ghostbusters II. 2 disks @ £3.00 a disk.
● **PDOM 86** - The Memory Expansions Systems demo No1. Excellent graphics! Requires 1MB RAM.
● **PDOM 87** - The Memory Expansions Systems demo No2. Amazing graphics! Requires 1MB RAM.
● **PDOM 82** - Batman Remix demo. Sampled sounds of Prince's BATMAN.
● **PDOM 83** - Space ACE Demo an excellent demo of the game with fabulous animation and incredible sampled sounds!
● **PDOM 65 and PDOM 66** - Red Sector Mega Demo. THE best demo on the Amiga! A mega good demo that only needs 1 drive. Amazing graphics, fabulous sounds, astounding vector graphics!!
● **PDOM 01** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.
● **PDOM 02** - The Walker Demo II the mega mega animation demo that requires 1Mb RAM.
● **PDOM 73** - AGAtron Special disk 10: Star Trek Dry Dock Demo. Excellent! Mega! Brilliant!Prefers 1Mb RAM, but you will get part of the demo on a 1/2Mb RAM.
● **PDOM 74** - Star Trek the Starship Enterprise flying around in a circle.
● **PDOM 76** - Agatron Animation 14: Star Trek Shuttle landing on the SS Enterprise. Prefers 1Mb RAM, but you'll get part of it on 1/2Mb RAM.

Game Disks

● **Pdom90** - Tennis game by C Dreke, excellent tennis action game .fully working.
● **FFISH252** - Star Trek Trivia V2.0
● **FFISH259** - Escape from Jovi V3.0
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● **FFISH 205** - Bally the arcade game, Battle Force V3.01 simulated battle between 2 robots, Chess V2.0.
● **SD 21** - Monopoly.
● **SOFT 118** - Amoeba Attack, Lander, Gravity Attack, World text adventure and Bullrun a battle simulation.
● **PAN 29B** - Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, BackGammon, Chain Reaction, Master Mind, Reversi, Black Jack, Crazy Eights, Klondike, Jig Saw, Keno, YachtC, Daleks and Ratmaze.
● **SOFT 042** - Chinese Checkers excellent version.
● **SOFT 068** - Clue as in Cluedo, Othello, Klondike, Canfield and Cribbge.
● **SOFT 069** - Backgammon, Yahzee, TVision, Missle Command, Cosmo 2 and 3D Breakout.
● **SOFT 117** - Empire, Gravity Wars, Hanoi, Hockey, Bikoff, Jackland, Othello Master,Pacman, all brilliant PD games.
● **AMP 8** - Game Pack: 3 disks SOF68, SOF69 and SOF117. A 3 disk pack for only £7.50!

Language Disks

● **FFISH 171** - Sobozon C a port of the Atari ST version of this full K&R C compiler, assembler and linker.Not for the beginner due to lack of disk info.
● **FFISH 193** - Zc V1.01 modified version of the Sobozon c compiler from disk FFish 171. It now generates codecompatible with A68k assembler and has a front end to allow easier useage.
● **FFISH 140** - Stoney Brook PROLOG v2.3.2. SB PROLOG requires 1Mb of RAM.
● **FFISH 91** - The Adventure Definition Language (ADL).
● **FFISH 201 and FFish 77** - Draco V1.2 is a compiled - structured language reminiscent of both C & Pascal. A full interface to AmigaDOS & Intuition is supplied. Be sure to get both FFish 201 AND FFish 77 @ £3.00.
● **APDC 25** - Logo, XLisp, Modular 2, MVP Forth.
● **PDOM 60** - Modula II compiler. Apparently fully working, complete and ready to use version with on diskdocumentation and examples.



Most of the disks in this advert actually contain more files than is listed. The ad also only shows a small portion of our catalogue, we have in stock TBAG, AMUSE,APDC, FAUG, Panorama, Amicus, Slipped Disk, The latest Fred Fish and our own PDOM collection. so for details of the service and a free copy of the 56 page bumper catalogue send a Stamped S.A.E. (If you are ordering you will get the latest catalogue).Disk Prices: 1 to 5 disks are £3.00 each, 6 to 10 disks are £2.75 each and 11 or more disks are only £2.50 each!

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MEGA WB

PROGRAM: PUBLIC DOMAIN
FILES: MEGA WB, MEGA WB.DOC

When run, *Mega WB* expands the Workbench work area far beyond the resolution limits of your monitor. In other words, you could have a Workbench area that stretches beyond the edges of your monitor. Imagine having a work area of 1024 pixels by 512 pixels. Or even, if you have the memory, 3000 pixels by 3000 pixels.

Of course, your monitor or TV can't display the whole work area in one go, and only shows the usual 640 by 256 image. In effect, you window in on a small area of the Workbench. By moving the pointer towards one of the edges of the screen, you can move around the *Mega Workbench* area.

Getting Started

Double-clicking on the *MEGA WB* program icon (inside the *MEGA WB* drawer) from Workbench sets up a default expanded Workbench area of 1024 pixels wide by 512 pixels high. That's roughly twice the normal Workbench size.

Pressing key F5 from the Coverdisk's main menu will also set up an expanded Workbench work area of 1024 by 512 pixels.

Follow these instructions if you want to create a custom Workbench area:

- Highlight the *MEGA WB* program icon by single-clicking on it from Workbench.
- Click on Info in the Project menu. (Remember, click and hold the right mouse button to make the Project menu, and all the other menus in the menu bar, appear.)
- You will see a box labelled Tool Types. Inside you will see Width=1024. Click the pointer somewhere inside the box to get a cursor. Delete 1024 and type in a value of your choice.
- By clicking on the down-pointing arrow inside the Tool Types box, Height=512 will appear in place of Width=1024 (or whatever your new Width value may be). Change the 512 to a value of your choice.
- Once you've made your changes, be sure to click on the SAVE gadget situated towards the bottom left of the Info box.

Do note, *Mega WB* won't work if you try to create work areas that require more memory than your machine is endowed with.

To de-install *Mega WB*, double-click on the *MEGA WB* program icon. Do ensure that all windows and icons lie inside the standard Workbench area before you try to reduce the Workbench area back to normal.

KEYBIZ

PROGRAM: MARK SCHRETLEN
FILES: KEYBIZ, KEYBIZ.DOC

Here's a program meant to change your working environment. Fnarr, fnarr. When installed in a multi-Amiga office, managers report dramatic increases in productivity levels yet workers insist that their output has not changed.

Further, all reports that they have developed a certain fondness or attachment to their Amigas and claim that their Amiga is friendlier than ever before. This fondness or friendliness is most frequently reported by more senior office workers who yearn for "the good old days" and frown upon technological advances. Some of these workers even claim substantial reduction in stress levels at work because of *Keybiz*.

The only real advice we can give is: don't believe the hype.

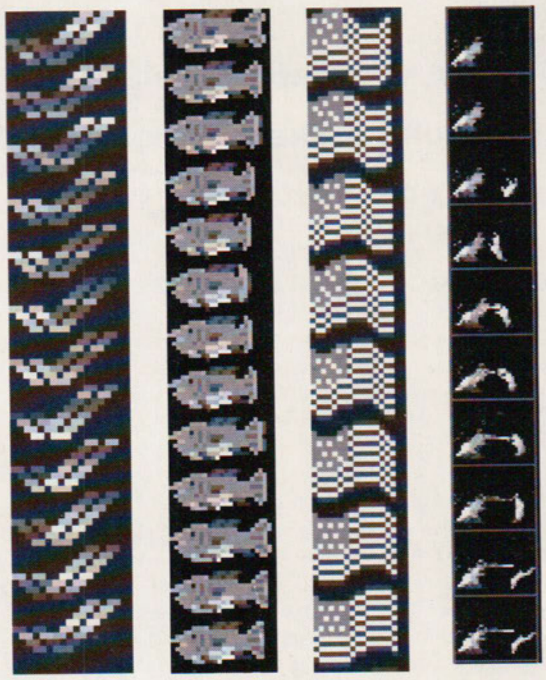
Getting Started

Pressing F7 from the main menu will transport you to the Workbench from where you can run *Keybiz* simply by clicking on the *KEYBIZ* icon located inside the *KEYBIZ* drawer.

Turn up the sound on your monitor or amplifier and continue with your normal work. If you wish to remove *Keybiz*, click once on the CloseWindow gadget in the *Keybiz* window that is displayed in the top-left of the screen.

POINTER ANIMATOR

PROGRAM: TIM KEMP
FILES: POINTERANIMATOR, POINTERANIMATOR.DOC, POINTERSTOPPER, MERGE, AMICHECK, FISH, FLAG, NOSE



Haven't you sickened of the Amiga mouse pointer? It's so dull, drab, lifeless, inanimate... *Pointer Animator* to the rescue! Tim Kemp's excellent program animates the Workbench pointer by substituting its own custom pointer. The pointer image is rapidly changed to give the illusion of animation. The image sequences are standard IFF ILBM files meaning you can easily edit predefined animations and create your own! In addition to the normal three-colour pointer, *Pointer Animator* supports a 15-colour affair.

Our eyes are specially designed to detect motion. On a normal Workbench screen with a good contrast between the pointer and display colours, you can easily distinguish the position of the pointer. On a 32-colour screen, it can be difficult to identify the pointer. Even with very similar colours, an animated pointer is easy to spot.

For a full run-down of how to go about creating your own animated pointer, look at the comprehensive help file. If designing animated pointers seems too much like hard work, there are four examples for you to tinker with on the Coverdisk.

Getting Started

To run a pointer animation from the Workbench, all you need to do is double-click on the animation's icon. Hit key F4 on the keyboard to read the *Pointer Animator* help and get to the Workbench. From the Workbench enter the *POINTERANIMATOR* drawer. Inside you will find icons with the names *AMICHECK, FISH, FLAG,* and *NOSE*. Double-click on any of those to get an animated pointed. Double-click on POINTER-STOPPER to revert to the standard mouse pointer.

GAMEBUSTERS SPECIAL

Yet again *Amiga Format* brings you a mighty collection of game hacks. This month's selection of hacks comes from Matthew and Peter Warner. the pokes can only be run by pressing key F6 from the Coverdisk's main menu and then pressing the appropriate function key when the Game Busters menu appears.

A QUICK WARNING

None of these hacks write to disk, but play safe and keep your original game disks write-protected when using them.

MUTANT CAMELS II

Infinite shields for the hairy hippy's manic shoot-em-up. Press F1 from the Game Busters menu to run it.

CAPTAIN FIZZ

Psygnosis' game laid bare. Infinite health and credits for the hero of the piece. F2 will get you the goods.

INTERCEPTOR F18

A superb hack giving you infinite missiles and cannon rounds in this monster flight simulator. Press F3 to run.

JOE BLADE 1

There's no way you can lose with infinite energy and ammo, and permanent enemy uniform. Hit F4 and follow the prompts.

JOE BLADE 2

Infinite energy and time are all you need to blast your way around the enemy fortress. Button F5 will give you invincibility.

USING YOUR FORMAT DISK

IMPORTANT! Before using your *Amiga Format* disk, you should make a back-up of the master disk as soon as possible.

BACKING UP YOUR DISK

For many reasons, it is important to make a backup of the Coverdisk as soon as possible. Copying the disk may sound like a complicated task suitable for techno-buffs only, but it is surprisingly simple provided you read the following instructions carefully:

1. First, turn on your machine and load Workbench. Once the Workbench screen appears and the disk-drive light goes out, remove your Workbench disk and insert our Coverdisk.

2. Next, click once on the Coverdisk icon and then press the right mouse-button and the Workbench menus will appear. Now, while keeping the right mouse-button depressed, move the mouse pointer over to the 'Workbench' heading and a menu will drop down. Move the mouse pointer over the 'duplicate' menu option and then press the left mouse-button.

3. After a few seconds' disk access, the Workbench DiskCopy tool will be loaded and run. Now just follow the on-screen prompts and your *Amiga Format* Coverdisk will be copied to a backup disk. When the machine asks for the destination, insert your blank disk into the drive. Further instructions are in the user's guide that comes with your Amiga.

USING THE PROGRAMS

All programs on the *Amiga Format* disk are specially set up to make them as easy to use as possible. If you can use the Amiga's Workbench then you can use our Coverdisk! If you do have problems with a program, full instructions on loading and using the programs are included in Disk Extra and these should get you up and running. If you still have problems, you should read the documentation file (.DOC) that is included with every program. To run any of the programs on this month's Coverdisk, follow a simple procedure: unless specified differently within Disk Extra, just double-click on the program's icon on the Workbench and it will load and run. Full details on how to use the programs once they have loaded are inc-luded as a documentation (text) file with the program.

To display a documentation file, just double-click on the appropriate .DOC file and a window will open containing the file's contents. Pressing the space bar will advance the text a page at a time.

COPYRIGHT NOTICE

Unless specifically stated, the programs on the Coverdisk are not in the public domain and the copyright remains with the author. Selling or distributing these programs without the author's permission is against the laws of copyright.

DISK EXTRA HOTLINE

0225 765086
Between 4pm and 6pm on weekdays only

Flummoxed by files? Dumfounded by disks? Paranoid about programs? If you have a problem with the disk – and you're sure the disk is in full working order – phone 0225 765086 with your query. State the model of your machine and anything you've got attached to (or plugged inside) the computer. For problems with disks before Issue 5 phone *Amiga Format* on 0225 442244.

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Approximate total size of files in kilobytes ....**K**
(we cannot use programs longer than 200K; shorter submissions, under 100K, stand the best chance of publication). It is a:

- ☐ **Game**
- ☐ **Business utility**
- ☐ **Music program**
- ☐ **Novelty**
- ☐ **Technical tool**
- ☐ **Art program**
- ☐ **Educational**
- ☐ **Other**

Brief description ....
....
....
....

Checklist **(please tick):**

- ☐ **Stamped, addressed envelope for return**
- ☐ **README.DOC explanation file on disk**
- ☐ **Printout of README.DOC file (if possible)**
- ☐ **Name, address, machine type written on label**
- ☐ **Disk certified virus free**

IMPORTANT **Please sign this declaration:**
This program is submitted for publication by *Amiga Format*. It is wholly my own work and I agree to indemnify Future Publishing against any possible legal action should copyright problems arise.

Signed ....

Date ....

IS YOUR DISK FAULTY?

We have done our best to check that the programs on the *Amiga Format* Coverdisk are simple to use, error-free and have no known viruses. However, we cannot normally answer telephone queries on using the software, and we do not accept liability for any consequences of using the programs on the disk.

If your *Amiga Format* disk is faulty – and out of the tens of thousands duplicated, some are unfortunately bound to be – you should send it back for a free replacement within a month of the cover date to:

Amiga Format
May Disk
Discopy Labs
Unit A, West March,
London Road, Daventry
Northants NN11 4SA.

If your Amiga refuses to accept the disk, try using the DISK-DOCTOR utility on your Workbench disk to rescue it before sending it off for a replacement. Full details of *DiskDoctor* can be found in the user's manual that came with your machine.

WARNING!

The game cheats on this month's Coverdisk are straightforward to use, but please read the instructions in the magazine, and on the disk. Please! If you screw up your game disks – or, indeed, any other disk – because you failed to read any documentation, we have to say it's your fault. You're on your own. We cannot be responsible for any damage incurred while using the Gamebusters hacks.

WE WANT YOUR PROGRAM

If you've got any programs for the Amiga which you think other readers would find useful, interesting or amusing, we'd very much like to know about them.
1. Make sure your program is foolproof to use. 2. Create a file called README.DOC on the disk which explains exactly how to use your program. 3. Fill in this form, sign it, and send it without delay to: CoverDisk Software, *Amiga Format*, 30 Monmouth Street, BATH BA1 2AP. You could win a share of up to £800 prize money for the best programs each month.

pd UPDATE





RICHARD MONTEIRO continues his five-year mission to boldly go where no PD pundit has boldly gone before boldly.

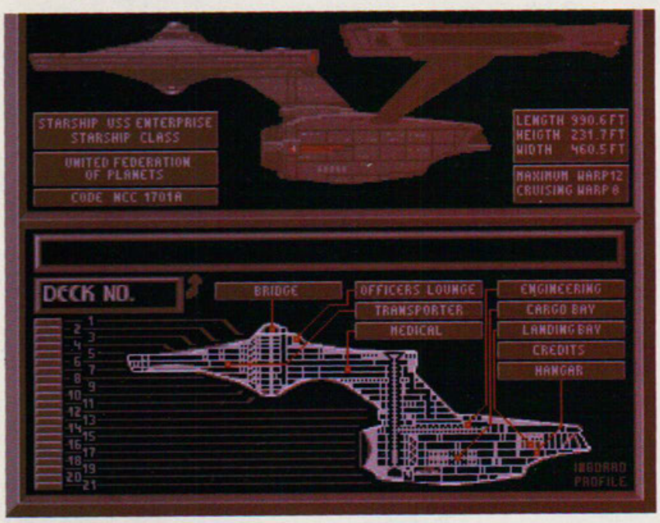
STAR TREK ● gts

Space... the final frontier. These are the voyages of blah, blah, blah. Like the countless episodes of the cult series which appears to have gone way past its five-year deadline, there seem to be countless games based on the *Star Trek* theme. Unfortunately few of the *Star Trek* games have attracted cult followings and there's little chance of them ever becoming classics.

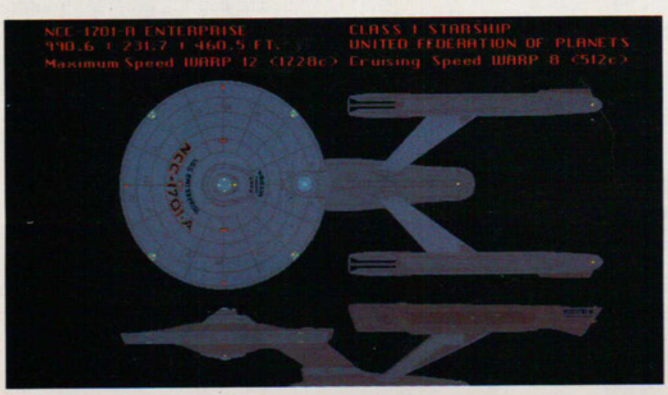
Now feast your eyes on the latest *Star Trek* game, a two-disk PD extravaganza offering you the Universe to explore. It's a huge game; brilliantly complex, stunningly detailed and enormously playable. Superlatives over, here's the rest of the story.

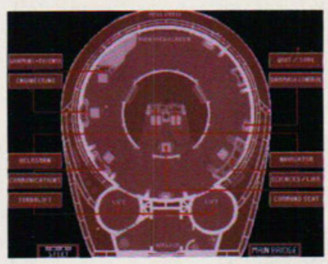
You're in control of the Enterprise (no surprises there) and can run from deck to deck shouting your orders and deciding where in the Universe to go. From time to time you will get missions from Starfleet HQ which you must complete. As in *Elite*, you can trade with planets and battle with any aliens you feel like wasting.

The game runs on a 512K machine; 1Mbyte is recommended because you lose many of the excellent sampled sounds on a less well-endowed machine. Still, it's better than no game at all.



ABOVE: By using the turbolift you can move from deck to deck and check supplies, officers' moral, your health, the engines and so on.

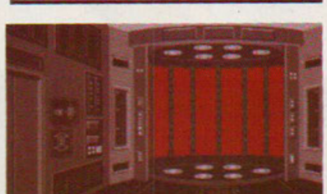




ABOVE: From the main bridge you can set your course, arm the photon beams, switch on the shields, communicate with aliens, interrogate the science computer and check on Scotty.

BELOW: In an emergency, you can always use the Shuttlecraft as a last means of escape.





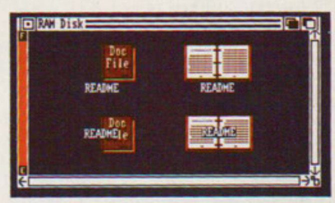
"Beam me up Scotty." "Aye, captain, but she canna take it – you gotta lose somma that weight."

ICONTOOLS Fish 284

Icontools is a collection of hacks rather than a single utility. The utilities exploit areas of .info files (icon image files) that the current version of Workbench fails to clear or reset upon loading the icon.

Fix allows you to specify the two colours that appear in the borders of the Workbench windows, *Lift* lets you position the filename anywhere in the icon's immediate vicinity and *Center* will position the filename in the middle of the icon.

While the hacks work with existing Workbench versions, there is no absolute guarantee that this will be the case with Workbench 1.4 and beyond.



The top two icons show how the file name normally lies underneath the graphic image while the bottom two icons show what can be done with *IconTools*.

MOUSECLOCK Fish 279

You've probably seen hundreds of utilities for displaying the time, date and possibly even amount of available memory; but you're guaranteed not to have seen anything as exotic as *MouseClock*. The utility combines a time, date, chip memory and fast memory display to the right of the mouse pointer. The display sprite follows the

Demos CORNER



Marvel at what your Amiga can really do!

INTROS 28
17Bit 584

Another great collection of Amiga mini-demos on one disk. On this disk you'll find:

BLACK MONKS – You've seen starfields before: now witness bubblefields, with the largest colour scrolling message ever.

COMPLEX – Funky music plays while an enormous vector grid spins. The grid can be controlled by your good self. Well, at least it's an interactive demo. It's marginally better than just looking and listening.

COUNTER FORCE – Three soldiers (I presume) stand silhouetted against a red skyline. Big scrolling messages bounce to an excellent house beat.

FRAXION – Wow! An original way of scrolling a message. Huge lettering spiralsgently upwards. The effect is brilliant. And that music sounds very familiar indeed... Nice one chaps, but was there really any need for the BOB bit at the end?

PHENOMENA – This one has appeared in the PD pages previously. It's the demo with a huge graphic of a helicopter flying in a jungle. Most impressive.

PUBLIC ENEMIES – Hmmm, what a strange opening sequence. It's the sort of thing Jason Holborn would appreciate. After the first bits are over you can steer a grid in any direction. Novel, to say the least.

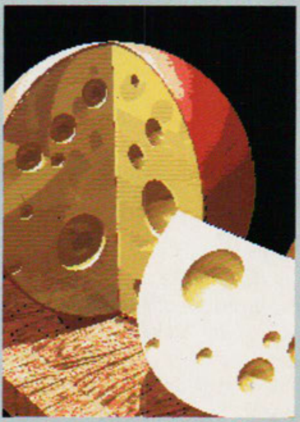
VISION FACTORY – Yet another interactive demo. This time you get to navigate a space craft over a load of bushes. Nuff said.

INTROS 29
17Bit 585

More mini demo mayhem from the likes of Brain Storm, Complex, Disknet, DMob, Poison and Vision Factory.

REAL 3D
17Bit 581

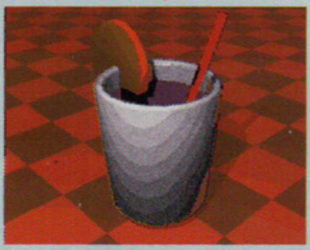
You better believe what you're seeing. High resolution, interlaced, ray-traced HAM images – breathtaking. You'll be lucky to tear your eyes from the screen.

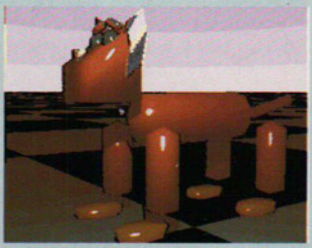


Just one of the many stunning screen images available on the Real 3D Picture Show disk.

UGA MUSIC DISK 15
Softville umus 15

Gyrate to the latest grooves produced on the Amiga. You'll find seven tracks from a selection of authors together with three tracks from Dtack on this excellent UGA (United Graphic Artists, if you're curious) compilation.





ARTISTIK DISK
17BIT 577

What a stunner! The disk, put together by the Sun Connection, features some of the best still-life images you're likely to see. The HAM ray-traced images in particular are spectacular. Even the haunting track that accompanies the pictures is very good.



Some of the Sun Connection stunners which are to be found on 17Bit Disk 577.



pointer as it moves round the screen. It's amazing, and probably the most convenient place for such information.

FISH 285
gts

What an excellent disk. It's packed with some cracking good utilities along with the obligatory smattering of the inane.

AVAILMEM

– A small free memory counter that continuously displays the amount of free chip and fast memory in bytes.

DYNASHOW

– Have you seen those stunning high-resolution overscan HAM images that certain video digitisers are capable of producing? Well now you can display them with this slideshow program.

'LINER

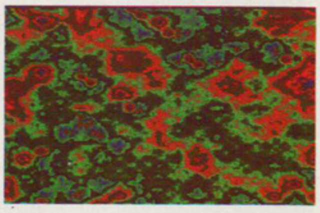
– This utility lets you outline a project like a story or a program.

MSIZER

– A program that lets you resize a window from any corner by holding down the left mouse button and the left Amiga key.

PLASMA

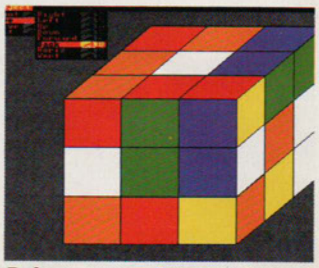
– Generates plasma clouds in extra-halfbrite mode. Plasma clouds are a special form of fractal which show smooth colour graduations. Useful, huh?



Yes, very pretty, but to be honest, just how useful are halfbrite Plasma clouds?

RUBIK

– source and compiled program of a Rubik's Cube solver. You shuffle the cube and the program tries to solve it in the shortest time. You



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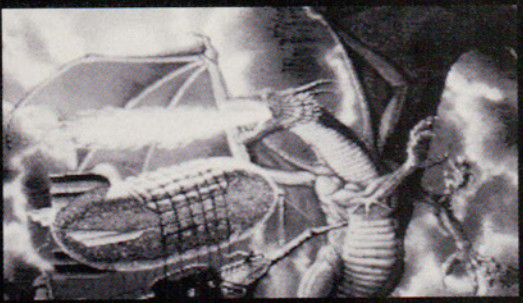
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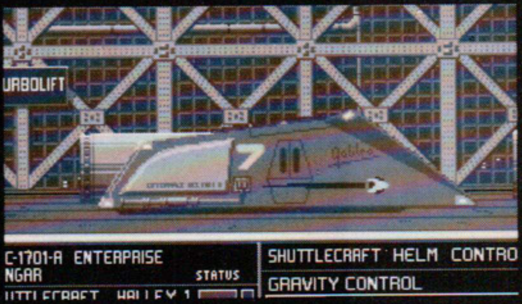
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can get the program to save a file of the moves it uses to solve the problem and refer to it later.

HOME FINANCE COLLECTION
Softville apdc 24

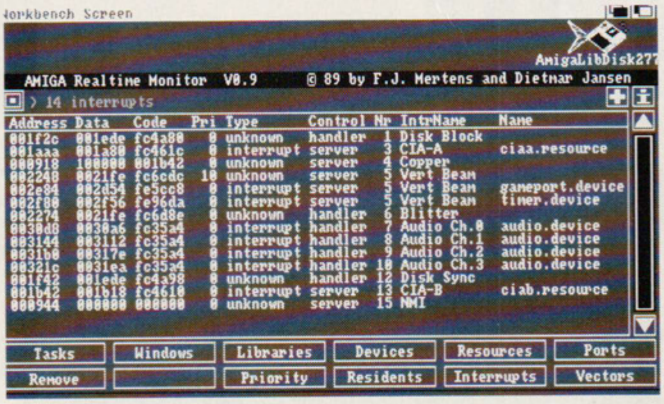
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– An excellent spreadsheet that rivals many commercial offerings. Visicalc is little different from established spreadsheets like *Lotus 1-2-3;* you're presented with a grid of rows and columns into which you may put labels, expressions or data.

HOMEHELP
– In short it's a grocery list generator. The system provides an easy method of preparing your grocery list and greatly simplifies your shopping trip. Hmmm...

BANKN
– A program to keep track of your bank account. You enter transactions into a a chequebook journal as they occur (no comments about chequebook journalists, please!).

You're presented with the remaining balance after each transaction has occurred. You may customise the expense code table to fit your particular needs and set budgets for each category.



With *ARTM* you can meddle with task priorities and even kill off runaway tasks, should the desire take you or the need arise.

SUPERMORT
– And finally, a utility to help you look after your mortgage.

ARTM
FISH 277

Here's one for technophiles. *Amiga Real Time Monitor* (*ARTM*) displays and controls multitasking activities in your Amiga. You can list all tasks occurring in your Amiga, select any one of them and either remove it or change the priority that it currently has.

In addition all libraries, devices, resources and ports can be displayed and – where applicable – can be removed or have their priority changed. Vectors, interrupts and residents can also be displayed and toyed with.

A powerful tool in the right hands. A guru-inducing program in the hands of the careless.■

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HARRY HART ANIMATIONS
Softville uanim 7

Some of the very best video grabbed animations have been tweaked, and in some cases modified, by the UGA team and put on a single disk. The results are hilarious as you can see from the nose sequence below...





ROLL OVER Amiga

Not content with your mouse? Well, now there is an alternative. MAFF EVANS checks out two of the possibilities.

The Amiga mouse is a sweet little thing. Rolling around the desk doing what it's told, getting things that it picks up off the surface clogged around the ball, getting its wire caught around objects, running out of room just before the pointer reaches its target. Well, there is one simple solution – a trackball.

A trackball is basically a mouse on its back which sits on the desk next to your machine. Although it may not seem like the greatest idea in the world to switch to using a trackball rather than a mouse, there are a few benefits to be found. For one, it stands less chance of its wire getting caught around things – which can be dodgy if the object in question happens to be something like a cup of coffee. Just try unsticking your keyboard once some hot drink has been tipped across it!

Another advantage is that you don't need a clear space to use it. Imagine a musician on stage with his Amiga running a sequencer. The musician has all his gear rack-mounted up, so there isn't a great deal of space to use a mouse. What does he do? Bung a trackball on the top of the machine and hey presto – full control in a much-reduced space!

So now you *all* want to get hold of one. But what are the alternatives? This month, two trackballs wended their way into the *Amiga Format* office, so here's a brief appraisal of how the pair performed.

FT-100 TRACKER

The first up for inspection is from HB Marketing, long renowned for their involvement in the serious side of the Amiga. The trackball itself is designed to blend in with the Amiga design-scheme, being the same colours and similarly-shaped so that it sits prettily next to the machine.

As well as the roller, the device has two buttons, placed to the left of the ball, which act as the mouse's left and right buttons.

The makers have also included a unique device to relieve the user of the old 'twisted wrist' syndrome endured while 'clicking and dragging' with the trackball. By flicking a switch at the back of the tracker, a third button beneath the other two can be clicked once to simulate the left button being held down while the pointer is moved. Pressing the button a second time 'releases' the mode.

This is supposed to make it easier for the user to operate the trackball, but for those of us (including me) who are left-handed, this causes more problems than simply having the buttons in the corners. The roller itself didn't fare too well either. At times it refused to cooperate at all, leaving the pointer to either wander hopelessly off course or just stick in the middle of the screen. This is a shame, since the 'drag mode' is a good idea which is unfortunately wasted on a dodgy trackball.

FT-100 TRACKER
■ All Amigas ■ Price TBA
HB Marketing, Unit 3, Poyle 14, Newlands Drive, Colnbrook, Berkshire SL3 0DX. Tel: 0753 686000. Fax: 0753 680343

ATARI TRAK-BALL

Having gained a good reputation in the Atari 8-bit community, Atari's classic trackball has arrived in an Amiga version. Being somewhat larger than the FT-100, the Trak-Ball is a big, ominous-looking black plastic affair with a large roller-ball in the centre and two heavy-duty buttons in the top corner.

Personally, I prefer this 'traditional' layout to HB's fancier design, as it's not so easy to forget which button is which – actually it's quite obvious which is which! The roller itself is superb. The smooth and free motion moves the pointer easily across the screen with little effort, so that precision movements can be made quickly and easily.

In all the Atari Trak-Ball is the one to go for: it just goes to show, just because a product is old, doesn't necessarily mean it's bad. In fact, it could become a classic!

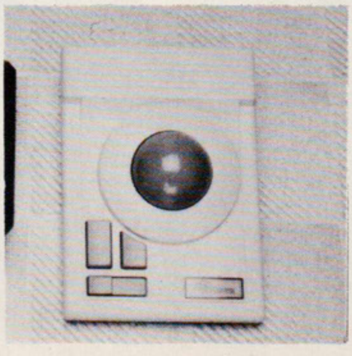
TRAK-BALL ■ All Amigas ■ £28.99
Hard Edge Communications, 98 Commonside, Walkley, Sheffield, S10 1GG. Tel: 0742 665719

TOP PICTURE: On the left is the Atari Trak-Ball: on the right is the FT-100 Tracker.

NEAR RIGHT: Trak-Ball

FAR RIGHT: FT-100





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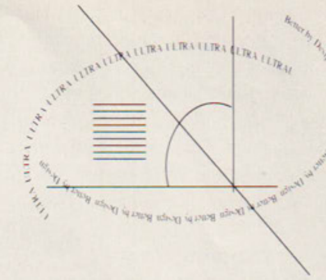
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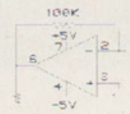
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Better BY DESIGN





The Amiga has created quite a storm in the low-end CAD market. JASON HOLBORN takes a look at the latest arrival on the scene, *UltraDesign.*

Computer Aided Design has traditionally been a rather elitist area of computing. Even with the arrival of the low-cost personal computer, the computing power required to drive the most basic CAD application put such packages firmly out of the reach of the budding amateur.

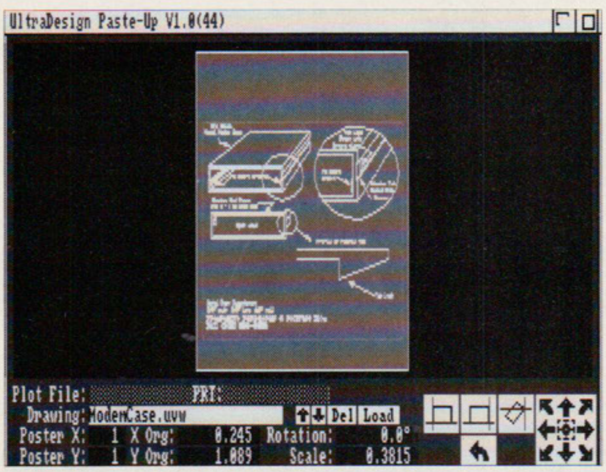
Even today, with powerful PCs coming in at ten a penny, modern CAD systems have advanced to require even greater levels of performance from the host hardware. With such steep processing requirements, it seems that the CAD user on a tight budget is still cut off from the technology that is required. Does a low-cost computer exist that can finally bring the power of the modern CAD system to the masses? Of course it does – and its name is Amiga.

The combination of high-resolution screen modes and fast graphics processing have put the Amiga at the forefront of low-cost computer aided design. No other computer at the price can hope to compare to the CAD potential that the Amiga offers. Even a comparable PC CAD system could end up costing you well over twice the price of an Amiga CAD system, while still failing to deliver many of the extras the Amiga is famous for.

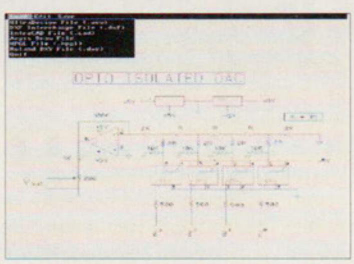
The Amiga's ace card is undoubtedly its multitasking capabilities. Many established CAD users have switched to the Amiga from systems costing many thousands of pounds for this very reason.

CAD applications are heavily processor intensive, so anything that saves time can also save money. Particularly time-wasteful is printing. Using a conventional pen plotter, dumping a complex drawing can take a long time: time in which the computer is rendered useless. With the Amiga, the user can carry on working during the printing process.

The cornerstone of the Amiga CAD revolution has undoubtedly been one package – CADVision's *X-CAD Professional*. This single package has done more to promote the Amiga as a serious contender within the CAD market than any other package. Realising the sales potential of the Amiga and *X-CAD* combination, Commodore have been pushing the system heavily.



ABOVE: A large number of different drawings can be pasted into one plot.



RIGHT: Files can be loaded in the formats of most industry-standard CAD packages.

Latest arrival in the Amiga CAD field is *UltraDesign*, from the US company Progressive Peripherals and Software. Progressive, who are better known for their successful image-processing package *PIXmate* and the Marcam FrameGrabber, were also responsible for the budget CAD system, *IntroCAD*. Although *IntroCAD* was far from professional, it paved the way for this latest release.

Designer Software

UltraDesign is a professional-standard computer aided design package designed to compete against the likes of Amiga *X-CAD Professional* and AutoDesk's industry-standard PC CAD system, *AutoCAD*.

The *UltraDesign* system consists of three separate programs: the *UltraDesign* editor itself, a printing utility called *PasteUp* and *CADverter*, a very handy little utility to allow you to convert CAD files from other systems for use within *UltraDesign*.

The *UltraDesign* main screen consists of a single window, which is your view of your drawing. Like all CAD systems, your drawings can be considerably larger than can be displayed on the monitor screen. However, *UltraDesign* uses a 'viewport' system that provides a 'window' on this larger workspace. It is possible to zoom right out to display the entire workspace within the current viewport, as well as being able to zoom in to examine the most intrictate items.

Depending on which drawing mode is currently selected, a row of icons runs down the left-hand side of

CAD CONVERSIONS

The Amiga IFF file format has made life so easy for Amiga owners, that the ability to share files between applications from different software producers is taken almost for granted. However, start using another computer and you'll soon realise how unusual the Amiga is – nowhere else within the computer industry will you find a computer that has such a high level of data portability.

Because the Amiga is a fairly new arrival within the CAD market, it would be rather unreasonable of Progressive to expect existing CAD users to scrap all their previous work in favour of *UltraDesign*. Although standards exist within the CAD world, CAD file formats are numerous. To make the transistion between old and new considerably less painful, *UltraDesign* includes a very handy file conversion utility called *CADverter*.

This utility allows you to convert to and from different CAD file formats. File formats supported include the industry-standard *DXF* format as used by AutoDesk's *AutoCAD* system on the PC-compatibles, Hewlett-Packard's *HPGL*, Roland's *DXY*, Progressive's own *IntroCAD* system and Aegis' *Draw*.

the screen. Selecting a particular drawing operation is simply a matter of choosing the appropriate drawing mode and then clicking once on the relevant icon. *UltraDesign's* drawing modes are split into distinct sections – Lines, Circles or Ellipses, Text, Dimensioning and Filling or Hatching.

Drawing Tools

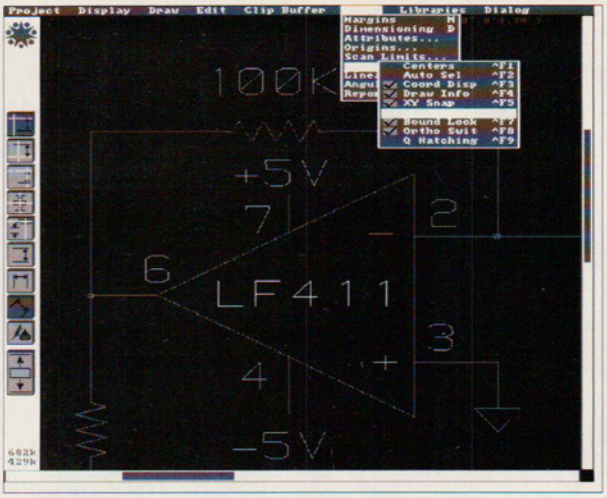
UltraDesign features all the standard CAD operations, plus a few more of its own. As well as the usual tools to create and edit objects, *UltraDesign* adds a few new tricks of its own. Drawing tools include circles, ellipses, boxes, multiple lines, arcs, arrowheads, ellipse rotation, filleting, razor lines and rubber-banding.

Positioning the cursor at the exact coordinates that you require can be a fiddly and often frustrating process. *UltraDesign* gets around this with the inclusion of a Seek To... option which attempts to place the cursor at the exact point that you require. All you have to do is to move the cross-hair close to the desired location and click the mouse button – *UltraDesign* will try to lock the cursor to the nearest object that meets specified criteria.

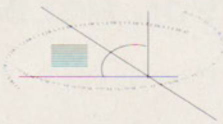
UltraDesign drawings aren't just limited to boring wireframe diagrams. Using a system called Hatching, any specified area may be filled with either a solid colour or a fill pattern. To aid the process of producing fill patterns, *UltraDesign* includes a versatile tool to make the previously tedious task of producing hatch files considerably quicker and easier.

Get Layered!

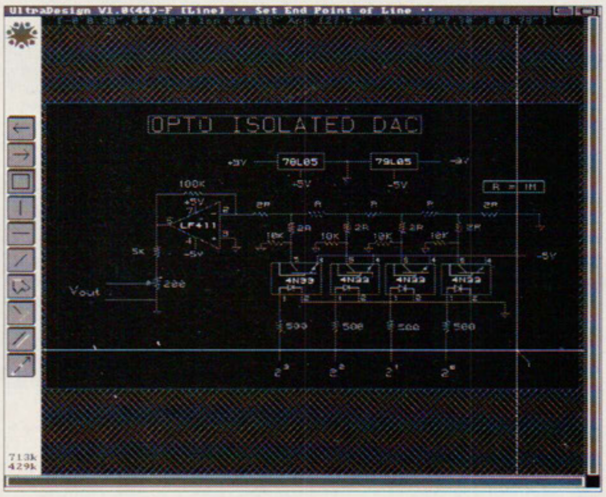
Layers are an all-important aspect of any CAD system. The use of layers allows any drawing to be split up into several overlaying sections. This is particarly useful with complex drawings, as individual elements can be isolated from the rest of the drawing. Thankfully, *UltraDesign* is particularly well-endowed in the layers department – it allows up to 65,536 different layers to be used. I challenge you to use that lot at once!



ABOVE: Setting up the use of a grid by which to control the placing of images.

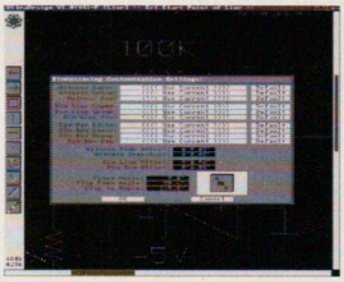


BELOW: Using the Set To... option to control the accurate placing of a line-end.



Text is particularly well handled within *UltraDesign*. Once defined, a line of text can be pasted down, rotated, reversed, flipped, inverted and scaled with ease. By default, two different font types are available to every drawing. However, the *UltraDesign* disks contain a further eighteen different fonts which may be loaded into the program and used. Structured fonts do use an awful lot of memory, however, so you are well advised to use them sparingly if you don't want to see your hard disk filling up very rapidly.

Because of the complexity of structured fonts, they can take a long time to be drawn – each character has to be drawn as a series of lines. However, *UltraDesign* gets around this time-wasting process with the impementation of a special QText module which speeds up text rendering considerably.



Control over the dimension specifications is more than adequate.

Conclusion

With the arrival of *UltraDesign*, the Amiga's potential as a serious CAD workstation has risen to even greater heights. Although the package is not as immediately useable as its main competitor, *X-CAD*, it offers many extras that should earn Progressive's product many devoted followers.

Particularly impressive among these are both the *PasteUp* and *CADverter* modules, described in the box-outs on this page and the previous page, which only go to prove that Progressive certainly have been listening to the ideas and comments of their intended user base.

To many of us, particularly home users, the price of *UltraDesign* may seem rather steep, but you must take into consideration that similar packages on other systems will set you back considerably more.

However, even at this relatively low price *UltraDesign* is undoubtedly aimed at the professional user blessed with lots of RAM, Flicker Fixer boards, high-resolution plotters etc. If you're a budding amateur, a better bet is almost certainly CADVision's budget *X-CAD, X-CAD Designer*.

For the professional user, not only is *UltraDesign* a true alternative to *X-CAD*, but also DTP users who require a drafting program to produce diagrams and the like for their page layouts may well want to check out this impressive product.

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PRINTER SUPPORT

Printing isn't handled directly by the UltraDesign program – instead your drawings must be saved out to disk and then imported into a separate printing utility called PasteUp.

According to Progressive, PasteUp represents a new dimension in producing hard copies of CAD drawings. The program allows the arrangement of any number of drawings onto a single page, in a very similar manner to a desktop publishing program. Drawings can be presented in exact scale, at any angular rotation. Even if the output device (printer, to you and me) cannot handle the printing of large-scale diagrams, the PasteUp program features a postering facility which will split the page up into several pages to be joined after printing.

PasteUp supports a whole range of different output devices and formats including standard Preference-supported printers. If you are using a dot matrix Preference printer, PasteUp will print at the highest possible resolution. Other printers supported include drivers for the Hewlett-Packard, Houston Instruments and Roland plotting languages.

However, most exciting of all is UltraDesign's support for both the Encapsulated (EPS) and standard PostScript languages. Not only can your drawings be output to professional printing devices such as laser printers and Linotronic imagesetters, but UltraDesign can be used to prepare images for other Amiga packages.

Probably the most common use of this facility becomes apparent with a package such as Professional Page 1.3. Now that ProPage supports the importation of EPS files, UltraDesign drawings can be pulled straight onto the page of your DTP documents. This option alone makes UltraDesign equally useful for DTP work as it is for CAD applications.

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D 231: Destination Docklands (J. M. Jarre at Docklands)
D 232: Blowfly (Music Rap ... could be offensive to some)
D 233: Darkstar Music Disk £4 (More great music)
D 234: SAE Disc 35 (New & very good!)
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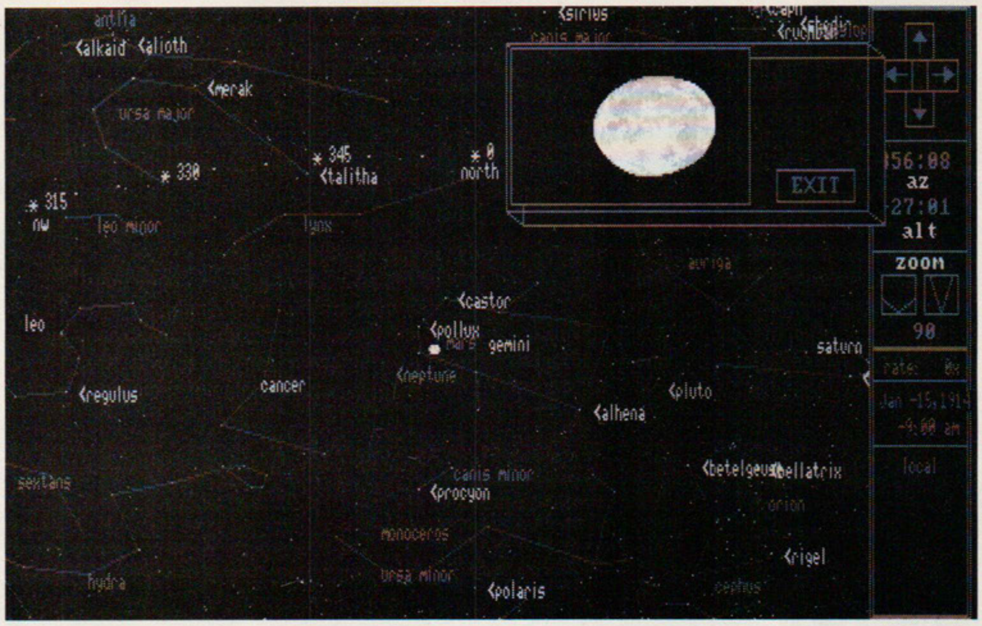
For the majority of us, the night sky is nothing more than a mass of stars. A few us can identify a couple of the more common celestial bodies, such as Venus, and a couple of the more immediately obvious constellations such as Orion, The Plough (or should that be the Big Dipper?) and the Seven Sisters (Bob insists that there is also a constellation called Dudley the Hamster, but none of us can find it!), but very few of us can identify the remaining 99.999% of visible stars.

This, then, is where *Distant Suns* comes in. If you have ever stared up into the night sky and thought to yourself 'I wonder what that star is called?' or 'I wonder what planets are visible tonight?', then *Distant Suns* may well be the program that you've been looking for.

Distant Suns is a powerful graphical database program containing details of over 2,200 stars (expandable to a further 9,100 or more using the *Distant Suns* expansion disks). The program provides a quick and easy method of identifying any celestial object at any point in time, at any place on the Earth. At its simplest level, just type in the time, date and your location (expressed in terms of longitude and latitude) and *Distant Suns* will display a map of the heavens complete with any extra information that you may require.

If it's planets you're looking for, *Distant Suns* will label any that are visible. If you're playing 'spot the constellation', then once again *Distant Suns* will do the hard work by tracing the outlines of every visible constellation. By using the program's Point and Identify option, information on any star is just a mouse click away.

Just like in real life, the number of stars displayed on-screen is affected by the light generated by your location. If you're out in the country, miles from the nearest light source, the skies will be filled with a seemingly endless number of stars. However, view the sky from the city and you will find that many of the dimmer stars will be washed out by the brightness of street lights etc. When you select the appropriate 'Skylight' setting, *Distant Suns* will simulate this for you.



ABOVE: Examining the Earth's satellite.

Space ACE

JASON HOLBORN whops out his telescope and goes looking for some heavenly bodies.

BELOW: Setting the position from which you view the night sky.



Time Travel

Have you ever wondered what the night sky was like on the day that you were born? If so, *Distant Suns* will let you look into the past – all you have to do is simply tell it the date, time and location.

Distant Suns' power doesn't just stop there, however, as you can even look into the future. Time travelling is limited – if that's the appropriate word! – to dates within the range of 9999BC and 9999AD.

The *Distant Suns* manual is a joy to behold. Filled with wit and humour, it not only documents the program's operations, but also serves as an introduction to the theory involved in observational astronomy.

The manual discusses all the various concepts neccessary to get the very most from the program, such as declination, right ascension and the equatorial coordinate system (sounds like it could be fun, eh!)

Conclusion

Distant Suns is a fascinating program that could well bring out the latent, aspiring astronomer in you. This is one of the few serious packages that will not only entertain you, but will also teach you a great deal about astronomy. The multitude of options offered by this program is so great that a review of this size can only touch upon its capabilities.

If you've ever been even remotely interested in the mysteries of the night sky – and you want to be able to impress people by pointing out Alioth on the way home from the pub! – then *Distant Suns* is certainly worth considering. Switch on your Amiga, switch off the lights and the secrets of the universe are laid out before you, ripe for the taking.

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ST FORMAT GOLD



Rainbow Islands
from Ocean

This follow up to Bubble Bobbie looks set to be as much of a hit as Ocean's last cutesy game, New Zealand Story. It combines colourful visuals with frighteningly addictive gameplay, with the result that you end up with one hell of a game.
Graphics have been downloaded from the original arcade version and the moves are just the same. Lead Bub and Bob to the top levels by firing rainbows into the air and then climbing them. When you reach the top of a platform, you can collect thousands of bonus points. There are seven islands to complete, each one more challenging than the last.
"Graftgold's ST Version of Rainbow Islands is one of the best coin-op conversions to have appeared in along time" Maff Evans, ST Format

Rainbow Islands

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3

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G

2



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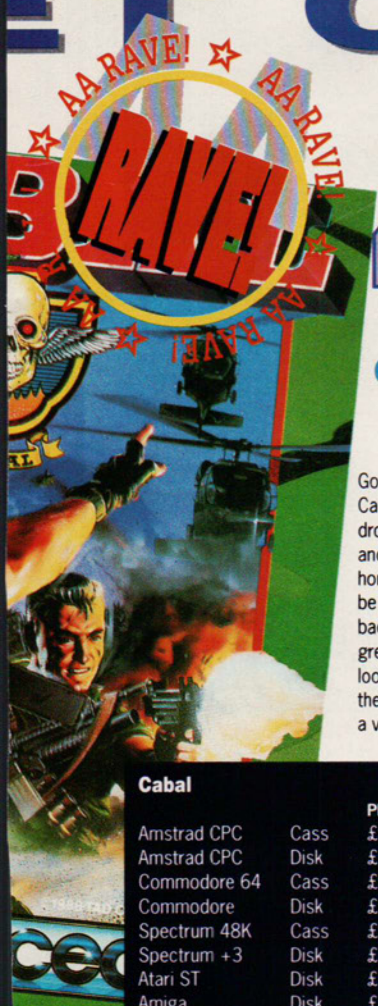
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4



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Doctorin' THE T

JON BATES looks over two new offerings from Dr T: the *Copyist* scoring software and *KCS v3*, yet another sequencing package...

Another sequencing package? You may well ask 'Does the world really need another music sequencing package for the Amiga?' One could ask a similar question of car manufacturers when they release a new product and their answer is, of course, 'Yes' every time.

The market does not get any smaller: in fact, it is now widely known that Commodore UK are not only throwing in music sequencing packages as part of their 'Class of the 90's' education bundle but are also trying in earnest to squeeze their product into more professional music studios. Proof of an expanding serious market as well as increasing home use. The bundled sequencing package is Dr T's *MRS*, the Spartan child of *KCS*.

Two Programs...

So what have we here? What's in the spotlight on the test-bench this month? Well, the *Copyist* notation program is one of the few pieces of scoring software for the Amiga and so it gets a good going over later in these pages. The sequencing package – the *Keyboard Controlled Sequencer*, better known as *KCS* – has been around since the dawn of the first cheap 16-bit home computer. Updates have been both regular and vigorous and now the latest Amiga version is available.

To call it merely a sequencer is hardly fair, because extras have been bolted onto the original that take it from being a mundane workaday sequencer to a multi-talented system that only stops short of making the tea. If you know and have used the software bear with us in the following review while we outline the way in which the package works. The additions will be highlighted for you to drool over later.

...Beat as One

Both programs can co-exist, obviously, but here's the twist. Dr T have what is known as a Multi Program Environment which will cause one program to hook into another and inter-react. In fact, they claim that up to 19 programs can co-exist and inter-react: if they are Dr T programs, that is. Methinks a wardrobe full of RAM will be necessary for this as both the programs under review use one meg: for these two to run happily 2Mb RAM is the minimum and even more is going to be needed if you think of RAM disk storage for temporary files.

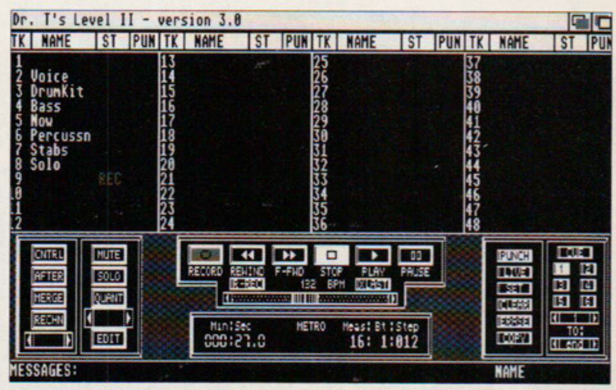
KEYBOARD CONTROLLED SEQUENCER V3.0

KCS v 3.0 has three operational pages plus several host routines/programs that can inter-react and control certain areas. The three main operation modes go by the names Track, Song and Open.

Heart of the *KCS* is the main Track page. You get a screen display of 48 tracks, awaiting your input, which occupy the top half of the screen. The bottom half is divided into three. Real-time quantize, flip to edit , MIDI re-channeling, track control et cetera are taken care of in the left-hand column. The right-hand column copies, erases, over-records and jumps to any of six cue points. The centre section is the 'tape transport' controls – in other words the fast forward, rewind, play, pause, stop, record – plus the metronome and location counter in not only bars and beats but also time elapsed.

The status of each track is noted – that is, solo or muted – and as soon as you finish recording one track the record option jumps to the next available track so that you can carry on without interruption.

If, however, you decide that your last effort was no good the 'R-Rec' option will halt operations in mid-stream and start you off again. A subtler version of this is the 'X-Last' which, rather like the similarly-branded laxative, purges the system of your last efforts!

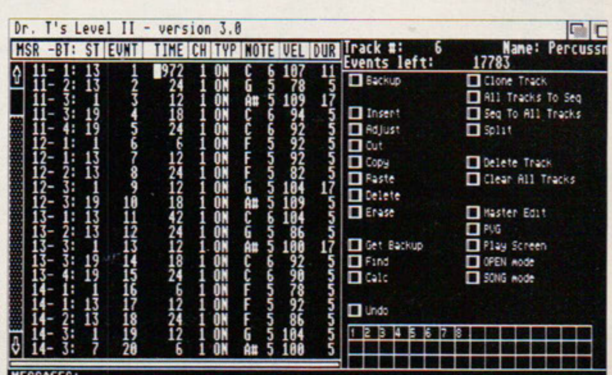


ABOVE: The Track Screen. 48 tracks simultaneously plus lots of handy icon controls.

BELOW: Track Editing. The events are listed (yawn) down the left hand side and commands on the right.

The tempo has an expanded or compressed range. Nothing mysterious here, just that you can either have normal metronome speeds of 40 to 240 beats per minute or you can go weird and demand tempos from 10 to 999. Tempos are adjusted by dragging the slider bar, clicking the arrows either end of the bar or using the qwerty keys which cause the tempo to jump in a pre-defined ratio.

Also on screen as opposed to menu are the basic MIDI filters for controllers and aftertouch which will



save on memory usage and simplify the data that is going in.

Punch It Up!

Replacing sections of tracks is achieved with the usual 'punch' button. Again on the main page as an icon, it lets you set the points at which you will enter and depart from record in the track. Cleverly, it automatically puts the new section onto a spare track and mutes the original section: thus you never actually lose data until you are happy with the new section.

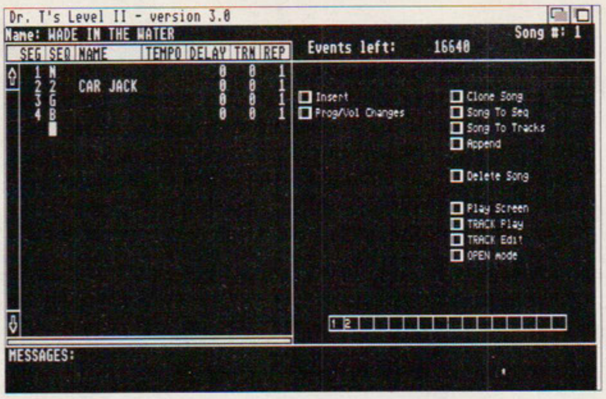
Several other smart routines enable you to copy or erase new data from track to track and to retain the punch cue marks or have new ones for each track. There is also a more complex live-edit mode which allows you to delete notes from a track or alter their velocities in real time as the track is playing. In total there are no less than 17 track functions, like punch, mute, etc. which should keep you occupied for some time to come.

Shift It!

There are many ways of transfiguring one set of MIDI data into another. This is another way of saying that data such as velocity can be converted into volume data, or vica versa, to create accents from, say, a pitch bend or modulation wheel.

You can also delay or pre-delay tracks. This is known as 'shift' and each track can be shifted in time forwards or backwards. The amount you can do it by is limited to three settings and notes shuffled off the end of the track are not sounded. This is often used for creating echo effects but I have to say that here it is a bit limited in application.

All the usual sequencing functions of naming tracks, swapping track location, erasing tracks are on hand. One oddity is that the Merge function in fact merges incoming and outgoing MIDI data – in other words it is a software Thru switch and on most other pieces of sequencing software it is called thus. The option for actually merging recorded tracks is called up from menu.

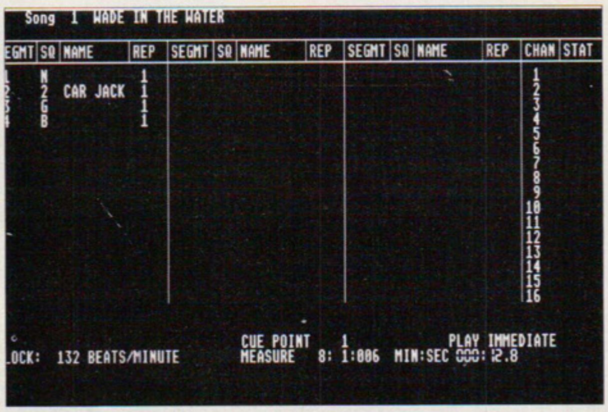


ABOVE and BELOW: Link the combined tracks together into sequences and chain them together.

Think about Sync

If you are planning to use *KCS* synchronized to other pieces of equipment then I should inform you that KCS will synchronize to most things in most ways. As a formality it obeys MIDI sync and song position pointer. It will also configure itself to work with incoming SMPTE code thanks to a host program called Phantom and it will send a special set of MIDI-exclusive commands to a Fostex R8 eight track recorder and slave it up to the screen control panel: you rewind the sequencer and the R8 rewinds as well. The same goes for play, fast forward and reverse since the R8 is kitted out with a MIDI In port. Obviously, to get the maximum benefit from this labour-saving routine KCS and the multi-track recorder need to be locked in sync – see 'That Syncing Feeling' below.





Keep on the Track

At first in Track mode you have to take a little care since the right-hand mouse button, which usually opens up the menu bar, is a controller in its own right in the active area of the screen. The menus carry an enormous variety of options, like copy all tracks to a sequence on the Open sequencer page, go to any bar, alternate ways of setting cue points, clear tracks, merge tracks, auto loop and record, and mute last recording, which is essential when trying out various 'takes' of solos.

One peculiar feature of the *KCS* is that the length of Track One is taken to be the length of the whole section. You can override that by specifying the track length from a menu option, but this is a method that I have never felt happy with because it predefines something that you may wish to override at a later stage. OK, you can stitch various sequences together but that tends to be repair after the damage rather than inspired work at the time of creation.

Edit Problems?

The edit screen for track mode has only one basic form of editing, of the 'data-stream' type. Down the left hand half of the screen is all the data for each event. Although this is an extremely accurate method, there are several things about it that I find a bit of a bind. First of all, it is entirely in the form of numbers and so as a trained musician I find it awkward to visualise what the bar and pattern should be like. Even a graphic display would help and it is far quicker to work with graphics than numbers.

For example, the duration value of all notes and events, expressed as a number, bears very little relationship to what the musician can hear or visualise: although there is a sort of 'help' option that roughly abbreviates the name of the closest note value. The rests between the notes are specified as a number between 0 to 65535, again fairly meaningless. The notes are named, thankfully, but again – why not display them? Even if you have never used a musical instrument before and so have no preconceptions, you would find this a neuralgic nightmare.

On the plus side is the tremendous amount of word-processor-type functions that you can perform in edit mode: cutting and pasting, splitting, creating back-up sequences, and so on. You can alter any of the data

THAT SYNCING FEELING

Although there is ample scope for a tutorial on this subject, a few quick explanations about synchronization and its whys and wherefores might not go amiss right here and now.

Synchronization is the locking together of one or more devices so that they work together. For instance, you might have a software sequencer and drum machine locked together by MIDI Clocks – a simple process where you ask the drum machine to listen out for the clock speed sent from the sequencer and to ignore its own internal clock. Not only will sequencer and drum machine work at the same rate but also they will stop and start together.

The Fostex R8 multi-track tape recorder is a clever gadget that has a 'MIDI In' port that will read incoming MIDI codes and thus perform the same functions, that of slaving the transport controls to a sequencer. But to run an ordinary tape recorder 'in sync' with a sequencer is a little bit more fiddly. One of the tracks on the tape has to be sacrificed so that a time code can be recorded on it. This is generated by a time-code generator and reader which is a separate (and not a cheap) piece of hardware. This time code is then read from the tape and transformed by the hardware box into code that the sequencer can understand. In this case the tape is controlling the sequencer speed and possibly the location too. The time code is usually SMPTE although it could be FSK, a much simpler ersatz code. The subject is complex; more to follow in this column at a future date.

fields en bloc or individually. It is also very easy to flip to another track without exiting the edit mode and hear any highlighted events.

In Track mode you only hear the track you are working on, so to edit and hear all the tracks together you have to go to Open edit mode. This is also where you would globally cut and edit events.

Gone for a Song

The Song Mode is fairly straightforward. Any amount of track sections can be mixed onto a sequence which in turn can be chained up to form a song. Up to 100 small sequences, called segments, can be linked to together in a multiplicity of ways. However, it would seem that any alterations such as transposition and cutting the length of segments would have to be done in either the Open or Track mode before linking them together. Loop points can be set as can channel mute and solo. You can also alter the order in which the segments play back as you are going along.

A couple of neat features are the step time mode, which takes the form of a list of events which you type in – you can set up parameters and insert from the host keyboard as well. The other is the program's use of the IFF voices available to the Amiga sound chip. It can load up to 16 voices and access any four of them at any one time. The option for this is taken from the environment menu. They are alterable and touch sensitive and can be set for any range of notes.

Extra! Extra!

Onward to the extra goodies that come with *KCS v3*.

Automix: The first is 'Automix', basically a screen full of active faders which will first of all control relative volumes of MIDI equipment but can also be adapted to any area you would like to control.

PVG: The second addition is a complex beast and is almost a composing tool with artificial intelligence. Almost, but not quite. I have to confess that to dig into its hidden depths would take an indeterminate amount of time, but the principle is that it takes particular areas such as note values, velocities, pitches, time, pitchbend etc, and subjects them to some fairly heavy-duty mathematical logic controls in an attempt to create a structured chaos out of which comes a new order – which is pretty philosophical for a mere sequencing tool!

You can create macro controls that can be called up so that you can, say, transpose a tune into a different scale, or alter the logic of its accents and timing. The name given to this gadget is the Programmable Variations Generator and Master Editor – PVG for short. It can create rhythmic cycles that build up and edit preset fields, with the Master Editor keeping a tight rein on the whole playback process. It is pretty complex and a bit unmusical at first but rather interesting after a while.

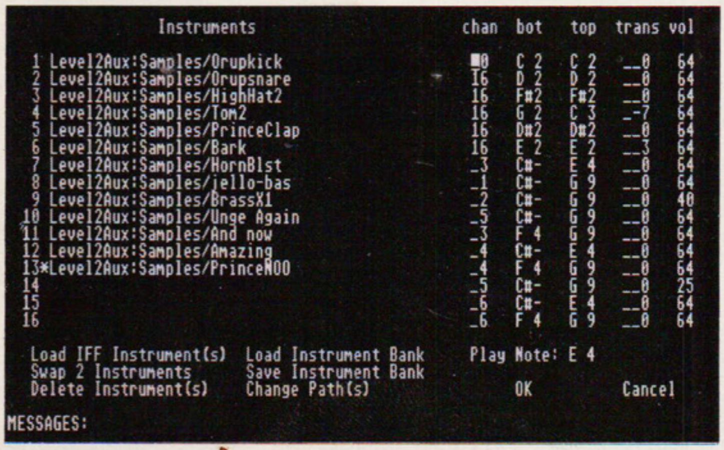
Conclusions

In the space we have available it is not possible to cover all the *KCS* features in great depth, but at least most of them have had a mention.

One of the benefits of having a well tried-and-market-tested piece of software is that you have all the options, bolt-ons and ways of processing data that the marketplace has demanded.



ABOVE: Open mode. Ok, you can't spot the difference between this and Track Edit: well it's a bit more subtle than a *News of the World* competition as you have to look at the MIDI channels which are mixed proving that it is more than one track mixed together.

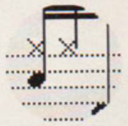


LEFT: Track Editing. The events are listed (yawn) down the left hand side and commands on the right.

I would guess that for most of the main functions there are at least two methods of operating them and possibly twice as many variations on the way that they operate. On the other hand it will take you a very long time indeed to exhaust the possibilities and know the alleyways of this program in detail which, if you are a newcomer to the field, could be a daunting task.

To sum the program up; it comes from a long line of *KCS* software and so has many refinements. However it seems a shame that despite its many and varied innovative features the editing seems to be rather behind the times as far as editing display goes; you have to type in every single editing detail. Nevertheless it is a powerful force to be reckoned with and is a well tried and tested professional tool.

Current owners of the old *KCS* can update for a mere £30 and should you be interested in the SMPTE aspect you can get the 'Phantom' SMPTE generator and reader for £249.00. It will also work as a MIDI interface if you ask it nicely.



KCS LEVEL II VERSION 3
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MIND YOUR PPQ

There is always much bragging in any sequencer literature as to the amount of PPQ it has – that is, the accuracy to which it will record each note. What happens is that the software breaks down each quarter note (crotchet) into a specified number of clock pulses; you could perhaps think of this as a clock ticking, the greater the number of ticks given to a second the greater the accuracy of the clock. This is the case with MIDI sequencers. Ppq, by the way, stands for Pulses Per Quarter note. Subtle nuances in tempo and note accuracy become rarified the greater the number of PPQ.

KCS v3 has a variable number of PPQ to define its accuracy. The default is 240 but it will go as high as 384, which is pretty good. However, tucked away in the back of the copious and corpulent manual is a little warning which recommends no higher setting than 240 BPM.

The reason for this is that the timing will eventually suffer: the program uses the gaps between events to run around and to do its work ready for the next output. With this time cut down and larger numbers to crunch there will be a tendency for the notes to start disappearing up their own points of exit (!) and for the software to suffer with severe stres from overwork, at which point it will probably take to its bed and wheeze weakly for a bit.



COPYIST APPRENTICE

As part of the Multi Program Environment the *Copyist Apprentice* will take *KCS* files directly, if they are both resident and running, and turn them into a score which you can edit and print out. It can also work in other ways. You can use it as a stand-alone music entry system, rather like a music typewriter, or you can load in MIDI files which it will turn into notation. It will also work with SMUS files to ensure compatibility with more low-budget sequencers like *DMCS*.



The reality is that you could well paint yourself into a corner as far as memory space is concerned. For *KCS* and *Copyist* to co-exist requires 2Mbyte of RAM. If you opt to store temporary files in RAM disk, that will require more. You could store temporary files (that is, those that are created by *Copyist* from *KCS*, MIDI or SMUS prior to conversion to notation) on a disk drive but it is very slow.

Setting the Score

On booting up you choose where the temporary work files are stored and the resolution to see the score in. Then it's down to scoring. The program will work on up to 12 staves at a time and the notes are entered, altered and edited by a combination of either menu options, alphanumeric keys and cursor.

Thankfully there are help pages on hand, because learning your way through the keystrokes could take a bit of time, even though the essential ones are the initials of the note or sign in reverse. Instead of dragging notes and symbols from a graphic menu you have to define the note and enter it; perhaps the former is intuitively quicker.

As a short cut you can have notes before and after or vertically aligned with the first note from simple keystrokes. It has all the logic of beaming and linking notes together where required and supports guitar and percussion notation. Entering text, lyrics and headings seems to be no problem either, although you do have to place them on the page yourself rather than the 'auto lyric' option often used in notation programs.

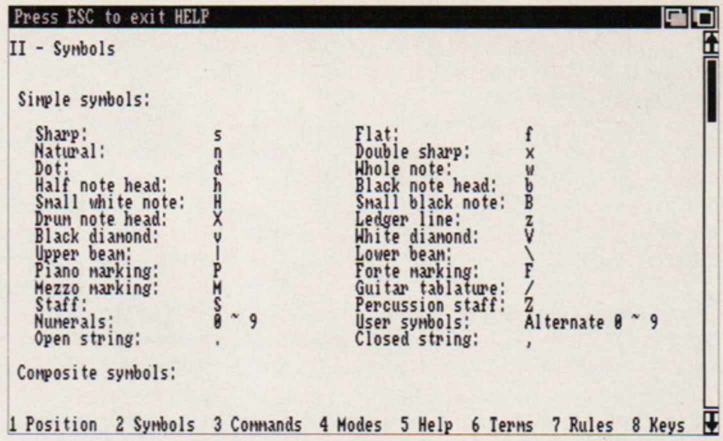
Copyist will notate all time signatures, clefs, signs and symbols, put notes of different values on the same beam, and position slurs, ties, expression markings, grace notes and ornaments.

Once all is in, then, it is print-out time. *Copyist* supports Epson and Laser with the option to route the output through the chosen Amiga print driver. However it pulls the score in and out page by page and this is a mite frustrating. Niceties like page numbering and headings seem to be missing from the *Apprentice*'s menu.

Its way of working I felt was not the most user friendly and it would have been nice to get a minature version of the page you are working on but nevertheless it is a well-thought through package. It main failing is the quality of the score itself. All the symbols and notes seem a bit emaciated and there seemed no way of setting a heavier or thicker typeface. As its name suggests it is the apprentice version of the *Professional* and the *Copyist DTP*. It is a good apprentice but not a master. ■

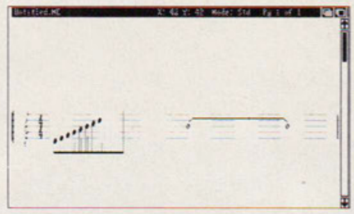
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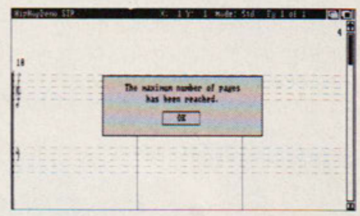
RIGHT: Part of the 8-page Help section.

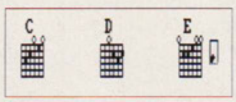


NEAR RIGHT: Oops! Batesy discovers bugs in *Copyist* when it comes to joining up the notes.

FAR RIGHT: A full *Copyist* score all ready to print out.

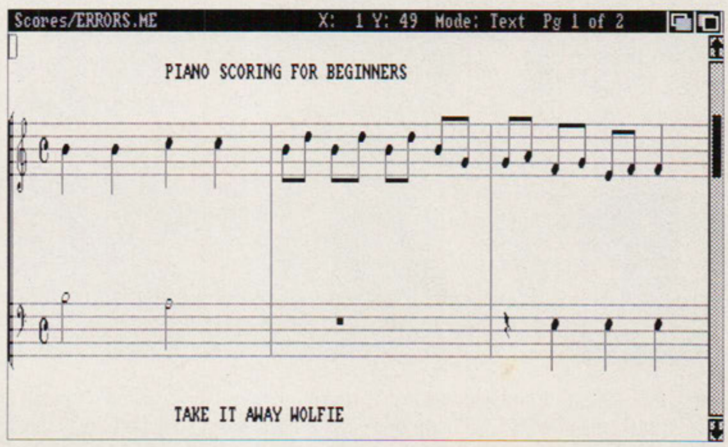


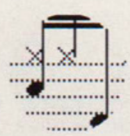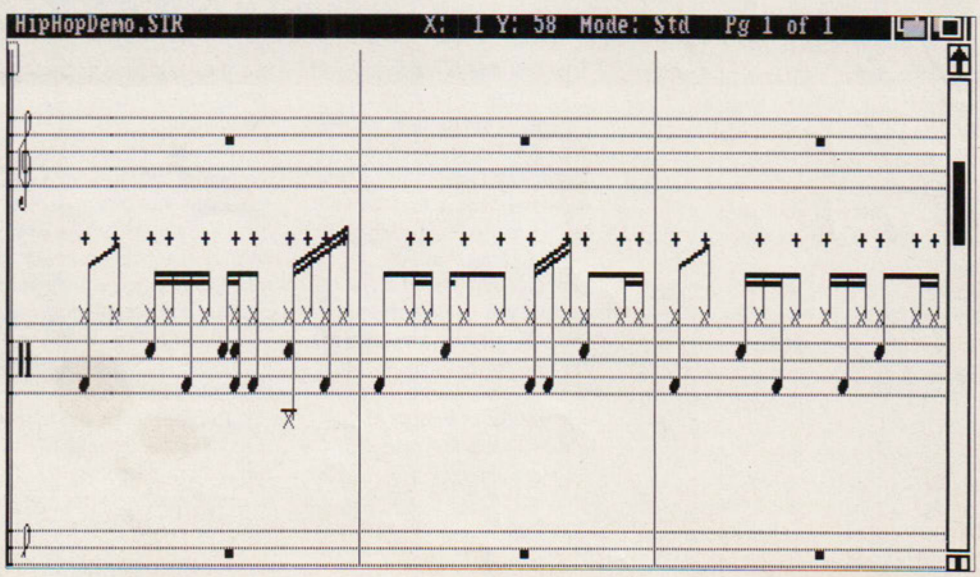




ABOVE: Also on offer is guitar chord notation.

RIGHT: Put it where you want it – adding text to the music.





BELOW: Automatic drum scoring: simple!



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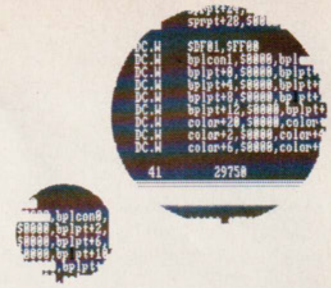
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Work BENCH

We all need a little help once in a while, especially with a machine as complex as the Amiga. **JASON HOLBORN** passes on the best advice.

MODULATED MONITOR

Anyone who uses the Amiga with a TV modulator will know what that the picture quality is far from satisfactory. Although the Amiga produces beautiful screen displays, these are let down by the poor quality of Commodore's A520 TV modulator.

However, there is a way to improve picture quality substantially by channelling the output from the TV modulator into an aerial booster amplifier (intended for use with indoor TV aerials). These devices can be bought for around £15 from most electric stores, such as Tandy. The resulting picture almost matches that obtainable from a proper monitor.

Nathanael Inteson
Meersbrook, Sheffield



Transform your TV into a high-quality monitor with our tip 'Modulated Monitor'.

EPSON DRIVER TIPS

Here's a couple of scorching hints which will help you get a decent graphics printout from an EpsonX-compatible printer.

1. Check the current density settings within Preferences – if you are using density 1 or 3 then watch out, because the paper-type setting affects the line-feed distance, leaving gaps between lines! If the paper type is set to single, then the line feed must equal the number of dots printed minus one third of a dot.

The wrong value here can result in horrible horizontal banding, which can make your printouts look pretty awful! The best way of working out the ideal setting for your printer is simple – just experiment with it.

2. Try checking the printing gap setting in the printer. Don't be put off by having to delve inside your printer – the results are worth the effort! On the Star LC-10, this adjustment is carried out using a small lever located at the left-hand side of the metal bar on which the print head travels. If in doubt about its location, refer to the manual that (with any luck at all) came with your printer.

This adjustment can make a surprising improvement in print quality. I have found that the different density settings in Preferences tend to require different gap settings to obtain good results.

3. Remember to use a white background colour or select 'negative' in Preferences in order to save wear on your printer ribbon (not to mention your ears!!)

A J Edmonds
Latchford, Warrington



Get more from your printer with our tip 'Epson Driver Tips'.

DIGIVIEW DISTORTION

Here's a handy tip for anyone using NewTek's Digi-View video digitiser with a colour video camera. If you are suffering from colour signal distortion interfering with the digitiser (which normally expects a mono signal such as that produced by the Hitachi MV-720k camera) and you're not afraid to do a little wiring, then help is at hand. The following modification will turn the colour signal from your camera into glorious monochrome (don't worry, no modification is required to the actual camera).

All you need is an 8 ohm loudspeaker like those found in old transistor radios. Failing that, pop along to your local electrical spares store (such as Tandy), who should be able to help you.

1. First, of course, turn off all power to the digitiser.

2. Next, get hold of a spare video lead and cut it in half. The cable will contain a central core and a braided outer sleeve – strip an inch or two back from either side of the break.

3. Connect the central core from one half to one loudspeaker terminal, and the other central core to the other terminal. Join the two ends of braid together.

4. Check that there are no short circuits – wrap some insulating tape around the braided join just to make sure.



Are your grabs suffering from distoration because you use a colour camera? Read 'DigiView Distortion'.

5. Turn on the power and connect the video directly into the back of your Amiga monitor, if you have one. Flick the CVBS switch and the video picture should appear... minus colour. If so, the camera should now work much better with Digi-View.

If nothing works, check your wiring. It's worth saying that, at video frequencies, electrical components such as loudspeakers can act as complex components and even those with identical impendances may give varying results.

Michael Lax
King's Heath, Birmingham

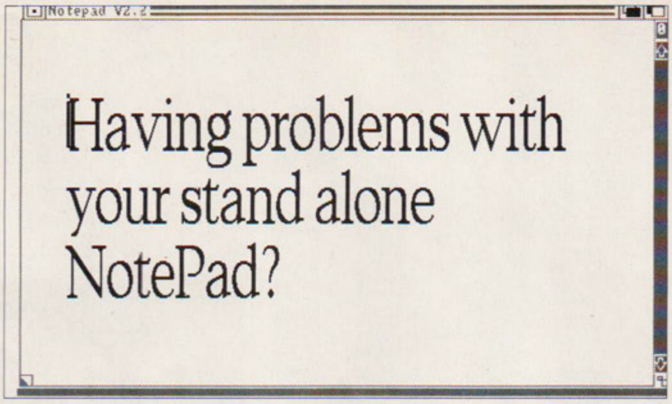
FILTHY RICH AND FAMOUS!

We know that our readers are an intelligent lot who can provide an absolute mountain of tips, tricks and general goodies to make life a bit more bearable for those us not blessed with brains the size of a planet.

If you have a scorcher of a tip – it can be about practically anything to do with the Amiga – then we want to hear from you. If your tip is the best of the month, then not only do you get your name in print, but you could even be the lucky winner of fifty quid! Yes folks, that's just like one quid, but there's fifty of them!

Put your tips and advice for other readers in the post now and send them to this address: WORKBENCH, AMIGA FORMAT, 30 MONMOUTH STREET, BATH BA1 2AP. Get writing straight away!

PROBLEMS WITH NOTEPAD



Have problems with our 'Stand Alone NotePad' tip? Read on!

was most interested in your article in last months magazine entitled 'Stand Alone NotePad'. This, I thought, was precisely what I needed and therefore decided to try the tip. However, having followed the instructions word for word (several times), I was unable to get the tip to actually work.

Every time I attempted to type in the commands listed within the article, all I ever got was an error Object not found. Are there any mistakes within this article, or is there something wrong with my computer?

Albert Evans
Newport

Oops! Deary me, we did make a bit of a boo boo in last month's Workbench. As all you frustrated tipsters you tried the Stand Alone NotePad tip will already have found out, the tip doesn't actually, as such, in practise, um... er... work. The problem isn't with the actual tip itself (Jason's tips always work – that's what Jason says anyway), but several printing errors managed to creep in after the text file left Jason's word processor (as anyone who knows him will agree, Jason never accepts responsibility for anything!)

The first printing error cropped up in nearly all the 'copy' commands that appear at the bottom of the first column. Those of you who know AmigaDOS sufficiently well will probably have spotted it straight away – the exclamation marks should actually be vertical bar symbols ('|'). All you have to do is to substitute every exclamation mark with a vertical bar and you're away. For example, the first line that features this error currently reads Copy C:Copy!MakeDir!Install!Ed RAM:, this should read Copy C:Copy|MakeDir|Install|Ed RAM:.

The second printing mistake can be found in the line that reads MakeDir DF0:DEVS:Printers. Anyone who knows AmigaDOS fairly well will probably have already spotted the mistake – the second colon (':') should actually be a backslash symbol ('/'). The line should now read MakeDir DF0:DEVS/Printers. To be certain, we tried the tip again and hopefully it should work (honest guv).

MAKING THE MOST OF MACROS

STAR TIP

Macros can be wonderful things. If applied correctly, a simple macro can not only save you many hours of typing, but can also take a vast amount of the drudgery out of programming.

One particular language that has more than its fair share of drudgery is Assembler. Many programmers build up libraries filled with macros to carry out particular tasks, thereby allowing code from different projects to be used over and over again.

The macros below were designed to take the drudgery out of writing hardware copper lists. Instead of having to write reams and reams of meaningless 16-bit values, your copper lists will finally become readable ("Impossible!" I hear you shout). Anyway, enough waffle, here's the juicy bits. But first we'll start with a look at the format of each macro individually.

```
CMOVE data,address
```

This is the copper MOVE instruction. The two values normally given have been reversed to match the 68000's MOVE format. For example, moving a value into the hardware colour register zero is achieved using the following command – CMOVE $000,COLOR00

```
CWAIT line,column
CWAITline,column,lm,cm
```

These macros provide both the normal copper WAIT instruction and the masked WAIT instruction. The vertical line and horizontal column must be given. The macros will then build up the neccessary word. If no mask is defined, the mask generated will be the default value of $FFFE.

```
CSKIP line,column
CSKIP line,column,lm,cm
```

Just like the CWAIT macros, the CSKIP instruction provides both direct and masked versions of the copper SKIP instruction. If no mask is defined, then the mask generated will be $FFFF.

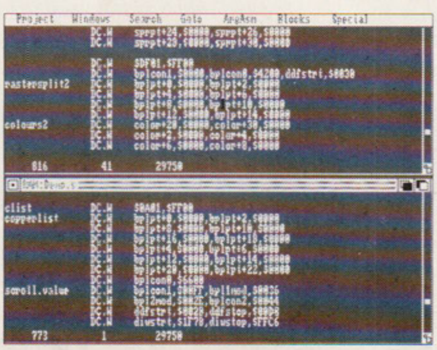
```
BWAIT line,column
BSKIP line,column
BWAIT line,column,lm,cm
BSKIP line,column,lm,cm
```

These four macros are similar to the Cxxxx macros with one exception. If the copper has been used to start a blitter operation, these macros will force the copper to wait until the blitter has finished. Note that the macro is checked AFTER the blitter is freed.

```
CEND
```

Not a great deal to this macros business really. This macro was created purely for cosmetic reasons and is basically just a friendlier version of DC.W $FFFF,FFFE which is used to end a copper list.

C G Wilson
Clwyd, Wales



Are your copperlists unreadable?

```
******************************
* Copper Macros *
* Coded for Amiga Format by *
* the Silicon Sorcerer *
******************************

CMOVE  MACRO
  DC.W \2&%0000000111111110
  DC.W \1
  ENDM

CWAIT  MACRO
  DC.W  (\1&$FF)*256+(\2&$FE!1)
  IFC   '','\3'
  DC.W  $FFFE
  MEXIT
  ENDC
  DC.W  (\3&$7F!$80)*256+(\4&$FE)
  ENDM

CSKIP  MACRO
  DC.W  (\1&$FF)*256+(\2&$FE!1)
  IFC   '','\3'
  DC.W  $FFFF
  MEXIT
  ENDC
  DC.W  (\3&$7F!$80)*256+(\4&$FE!1)
  ENDM

BWAIT  MACRO
  DC.W  (\1&$FF)*256+(\2&$FE!1)
  IFC   '','\3'
  DC.W  $7FFE
  MEXIT
  ENDC
  DC.W  (\3&$7F)*256+(\4&$FE)
  ENDM

BSKIP  MACRO
  DC.W  (\1&$FF)*256+(\2&$FE!1)
  IFC   '','\3'
  DC.W  $7FFF
  MEXIT
  ENDC
  DC.W  (\3&$7F)*256+(\4&$FE!1)
  ENDM

CEND   MACRO
  DC.W  $FFFF,$FFFE
  ENDM
```

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Arthur C. Clarke
author of 2001: A Space Odyssey

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TIME TO MOVE ON?

To expand, or not to expand? That is the question. I bought my Amiga 1000 when they first came out – well someone had to! Although I have since bought the extra 256K RAM expansion (knocking the machine's memory up to 512K) and a second disk drive, it is still relatively unexpanded. I have built up a nice little nest egg over the years and will soon be wanting to add a hard drive and other such luxuries to my machine. Could you possibly answer a couple of questions?

1. With the dawn of ROM-based Kickstarts, ECS and peripherals made for use on only the A500 and 2000 (Xetec's FastTrak etc), is it time to lay the old A1000 to rest and buy myself a nice new Amiga 2000?
2. If so, do I say goodbye to *The Music Studio* and *Leaderboard*? (both will only work under Kickstart 1.1)?
3. What exactly is Fast RAM, and why haven't I got any?
4. In either case, I need a hard disk drive that also provides space for RAM expansion. Is RAM quicker when installed in the hard drive unit?

J Hall
Epsom, Surrey

1. With the impending release of both Kickstart 1.4 and the Enhanced Chip Set, it seems that Commodore have forgotten A1000 users. Thankfully, third party developers have not. One company in particular that A1000 users have to thank is Delaware Valley Software, who are soon to start shipping a board that will breathe new life into Commodore's original (and arguably their best) Amiga.

The Delaware Wonder Card is a very clever little board that slots in as a replacement to the Kickstart daughterboard inside the A1000. This board allows the Amiga 1000 to use both the ECS and even Kickstart 1.4, which is ROM-based! Not only that, but once the ECS is installed the A1000 will have access to all the new ECS screen modes and the ability to use up to a megabyte of chip RAM.

Optional extras include a battery backed clock, an audio filter switch and the ability to software select between 1.2, 1.3 and 1.4 of the Amiga O/S. How can an A1000 owner live without such a device? (My A1000 is going to get one as soon as they are available in this country!)

Needless to say, as soon as it is available we will review this wondrous piece of hardware. Until then, Delaware can be contacted on 0101 215 446 9227.

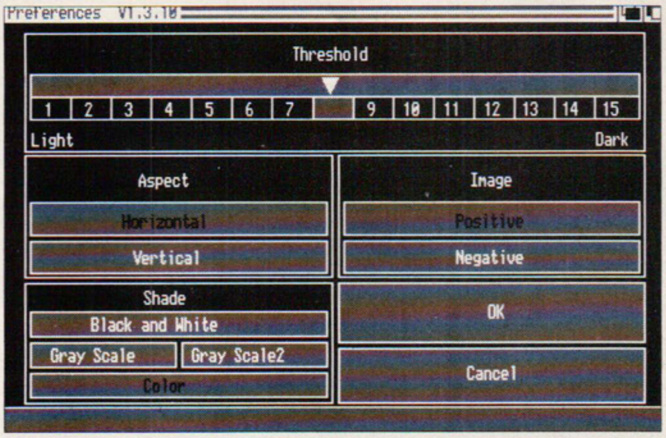
2. Most software that will only work under 1.1 of the operating system has since been re-released in a 1.2/1.3 compatible form. Both Music Studio *and* Leaderboard *are included in this.*

3. Fast RAM is memory that cannot be used by the Amiga's custom chips – only the 68000 can access it. If you buy a RAM expansion to take your Amiga over 512K, you will have Fast RAM in your machine. (There's also Slow RAM, but we won't go into that!) If you need a RAM expansion for your A1000, then GTS sell A1000 RAM expansions. GTS are on 077082 234.

4. As far as I am aware, no such device exists for the A1000. Looks as if you may be forced to buy a separate RAM expansion and hard drive.



What will become of the A1000? Read 'Time To Move On'...

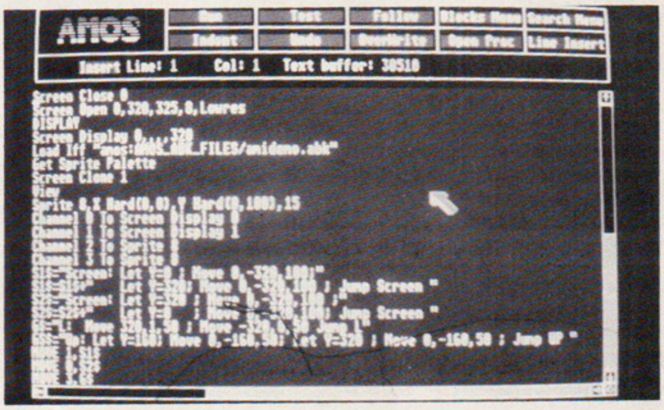


The Graphic 1 screen within Preferences.

STAR STRUCK

I have recently treated myself to an Amiga 500 and a Star LC-10 colour printer. Although I have owned the printer for over two months now, I am still having problems with it. My problems are simple – no colour prins out and no pound signs appear. When I try to print something in colour, all I get is plain boring black and white. As for the pound sign, all I get is ➤

BASIC PROBLEMS



AMOS **– Just what you need if it's ultra-fast graphics, animation and scorching sound that you're after.**

Curiosity has forced me to put ink to paper and ask Workbench a few questions.

1. What is the correct meaning of the abbreviation, CLI? I have heard it called the 'Command Line Interface', the 'Command Line Interpreter' and even the 'Command Language Interpreter'. Which is correct?
2. I am considering purchasing HiSoft's BASIC compiler. Is its speed worthy of its price tag? Also, can I access the Amiga operating system libraries (Graphics, Intuition etc)? If I use the operating system routines, will my programs run at near machine code speed?
3. Is GFA BASIC (once compiled) as fast as HiSoft's system?

C Griffin
Merseyside

1. CLI definitely, no question about it, no arguments, most certainly stands for 'Command Line Interface'. Take no notice of anyone who says otherwise – both Commodore and myself say so!

2. HiSoft BASIC, like AmigaBASIC, allows you complete access to the power of the Amiga's operating system. However, as any Amiga applications programmer will tell you, the Amiga OS routines are far from fast (the graphics library is particularly bad) so your programs will never be that fast.

If it's ultra-fast graphics, animation and sound that you're after, then a better bet could well be Mandarin's soon-to-be-released BASIC language, AMOS. This excellent provides the kind of graphics and sound facilities that were previously only accessible from assembler.

3. GFA BASIC is a blisteringly fast language, faster than both HiSoft BASIC and AMOS. For an idea of the speed of GFA BASIC, check out our review of the GFA Compiler in Issue 8 of AF.

a hash symbol. What could I possibly be doing wrong?

M Lawrence
Hampshire

Humm, strange one that. There are several reasons why your printer could be refusing to print in colour. The first possibility is the blatantly obvious one – have you got a colour ribbon in the printer, or is it just a black ribbon?

Secondly, have you actually told the Amiga that you are using a colour printer? This is achieved using the Workbench Preferences tool. To check, load Preferences, enter the Change Printer screen and then click on the Graphic 1 gadget and you should see a screen display similiar to the one printed on this page.

You'll notice that there is a box called Shade at the bottom left of this screen that contains four gadgets. The one that you are interested in is colour, which should be highlighted (click on it if it is not). Once you've done this, save off your new configuration and try to print in colour – if all goes well, your problem should now be solved. Note that you will have to carry out this procedure for all your boot disks (DPaint etc).

The problem with hash symbols is simple to solve. Somewhere on your printer you will find a row of dip switches. These are used to configure various aspects of the printer. One of these dip switches (pin 5, if my memory serves me well) is used to tell the printer to print either hash symbols or pound signs. Refer to the manual that came with your printer to find out exactly which dip switch to flick.

AMIGA FORMAT WORKBENCH CAN HELP YOU WITH YOUR PROBLEMS!

Here at *Amiga Format*, we do our best to help readers with their problems. In many cases tips and tricks that other readers have found for themselves are good advice for others, so we are always happy to receive tips – and to pay for them as well.

But Workbench isn't just about tips and tricks to help you get the very most from your Amiga – we also try to help sort out any problems you may have.

If you have a problem which is causing you grief, then put pen to paper and write to Workbench, Amiga Format. Please note that we're a busy lot (producing a state-of-the-art, market-leading magazine takes a lot of hard work!) and so we cannot take phone calls or reply personally to any letters, so save your stamps: if you do send us a SAE, then Damien will roll it up into a ball and throw it at Andy just when he's about to achieve a high score.

Send your letters to: WORKBENCH HELP, 30 Monmouth Street, Bath BA1 2AP. Go on, make my day!

C FOR YOURSELF

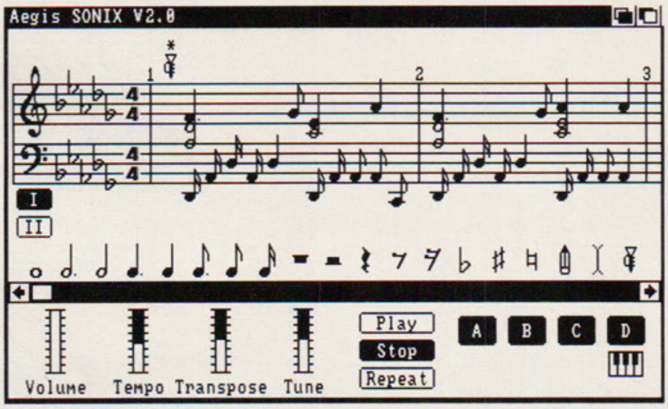
1. Why is there such a large variation in price between RAM expansions? For a 512K RAM expansion, I've seen prices in your mag that range from as little as £50 to well over £100. Are all RAM expansions created equal or are some more equal than others?
2. With a MIDI interface, is it possible to use a normal keyboard and guitar for input, or must I buy a device made specifically for use with the interface?
3. What is the difference between *Aegis Sonix* and *Deluxe Music?* Which package is best?
4. Excuse me for being totally thick, but what exactly is C?

N Chadwick
Garbleshire

1. Speaking very generally, there is very little difference between 512K RAM expansions. However, there are several things to take into consideration when choosing the one that is good for you.

Some RAM expansions offer battery-backed clocks that allow the Amiga to keep time even when it is turned off. Most people rarely use these, so it is simply as case of deciding whether your require such a facility. Usually, the lack of a battery-backed clock can knock about £20 off the price of a RAM expansion.

Another factor to consider is future expansion. If 1 Megabyte is enough for your needs just buy the cheapest 512K RAM board that you can find: otherwise you are advised to look for a board that offers further

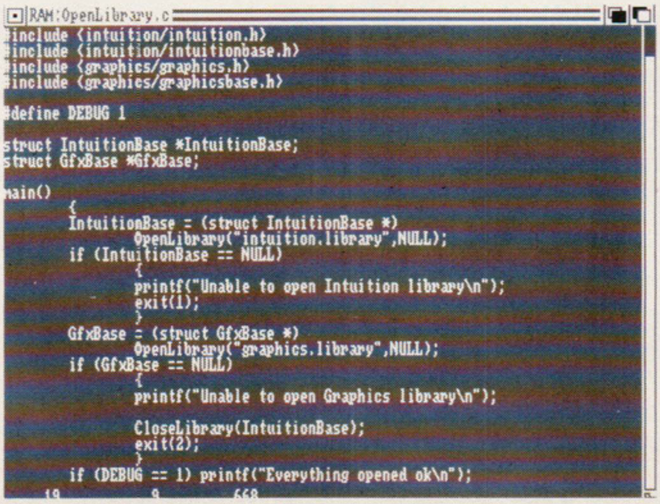


ABOVE: *Sonix* – an ideal introduction to music making on the Amiga.

BELOW: C offers high performance and portability.

expansion. Quite a few boards come populated with just 512K but can be taken further by simply plugging in extra RAM chips.
2. MIDI is an industry-standard communications protocol that was devised to allow any MIDI device (regardless of make, model or type) to talk to any other MIDI device. As long as the instruments that you have support MIDI, they will happily work with your Amiga MIDI interface (providing you have the appropriate software to hand!)
3. Aegis Sonix and Deluxe Music are in many ways very similar. They are both music packages that allow the creation of music by placing notes onto a standard musical stave. Deluxe Music is a far more powerful package, but is rather user-unfriendly at times. Aegis Sonix, on the other hand, is favoured by many because of its ease of use. If you're new to music software, then Aegis Sonix is probably a better bet.
4. C is a programming language devised during the early seventies by Brian Kernigan and Dennis Ritchie at Bell Laboratories, for use on their then-new operating system, Unix. C is a highly-structured programming language that lends itself particularly well to systems programming (operating systems, low-level device drivers etc). The language was designed to offer high speed of execution, a very high level of portability (C programs from one system can be taken across to another system with minor modifications) and C programs suffer from very few overheads once compiled.

A large amount of the Amiga's operating system was written in C (Graphics and Intuition libraries etc. AmigaDOS was unfortunately written in a wretched language called BCPL, which is even more hideous than COBOL!), hence its popularity. If you are planning on writing applications that use the Amiga operating system, then C is a very good choice.



```
RAM:OpenLibrary.c
#include <intuition/intuition.h>
#include <intuition/intuitionbase.h>
#include <graphics/graphics.h>
#include <graphics/graphicsbase.h>

#define DEBUG 1

struct IntuitionBase *IntuitionBase;
struct GfxBase *GfxBase;

main()
        {
        IntuitionBase = (struct IntuitionBase *)
                OpenLibrary("intuition.library",NULL);
        if (IntuitionBase == NULL)
                {
                printf("Unable to open Intuition library\n");
                exit(1);
                }
        GfxBase = (struct GfxBase *)
                OpenLibrary("graphics.library",NULL);
        if (GfxBase == NULL)
                {
                printf("Unable to open Graphics library\n");

                CloseLibrary(IntuitionBase);
                exit(2);
                }
        if (DEBUG == 1) printf("Everything opened ok\n");
```

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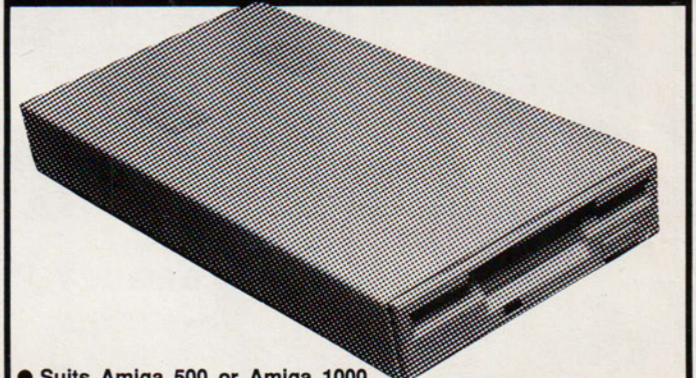
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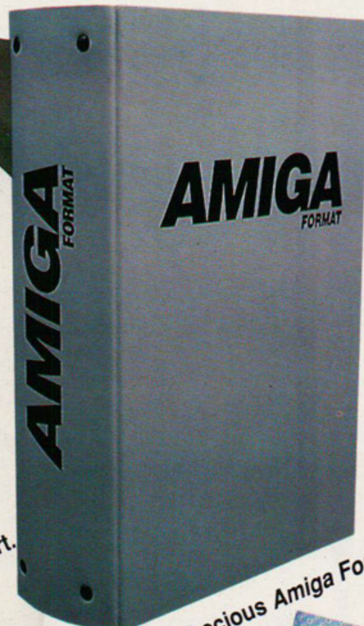
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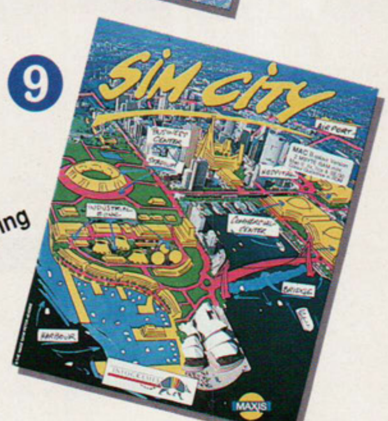
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DELIVERED BY hand





TIM SMITH gets to grips with the GeniScan 4000 hand-held scanner from Datel.

The first thing which leaps out at you with this hand scanner is just how easy it is to use. Fitting the thing takes one 13-amp socket for the power supply, one parallel port for the 25-way connector, a fairly flat surface for the scanning to take place and Jean's your aunty.

You get software which will allow you to manipulate the images in quite complex ways and the hardware itself. We won't go into the power supply (which is no more than a black box) but the rest of the kit deserves some examination.

Logical, Captain

The real work is done by the modest logic chips, which reside in a small plastic case that plugs into the parallel port. Logic-based they might be, but even their Spock-like abilities will not allow them to deal with 4094 of the Amiga's 4096 colours. The Datel Amiga Handscanner is a monochromatic device. But don't let that put you off. To achieve colour scanning would cost a damn sight more than the most decent human beings could afford. A flatbed, colour scanner will cost you anything from a thousand pounds upwards.

What you do get are 'grey scales' rather than a flat, boring, badly-photocopied mono. The grey scaling will produce half tones at sixteen levels of gradation or, if you prefer, a simple two-tone. Both of these formats can be saved in either IFF or RAW form. The former allows you to transfer the captured images over to other software such as desktop publishers or paint packages where you can add as many colours as you like.





ABOVE: The GeniScan 4000 bears a strange resemblance to a '70s TV spaceship.

ABOVE LEFT: Defining the size of the scan.

Head!

The trick, of course lies in capturing the images in the first place and to do this you need to concentrate on the scanning head itself. This is connected to the interface by way of a small 8-way DIN plug. In appearance the scan head bears a striking resemblance to a late '70s idea of an interplanetary scout ship – a kind of rounded-off 'T' shape – upon which you will find four controls.

The brightness is monitored by a thumb-wheel at the rear of the device. While this affects the way you see the image appearing on screen, it also controls the way in which the software defines light from dark. Although it appears to be the least important of the devices at your command, getting it right is imperative if you wish to have a clear image to play around with later.

Next to the brightness control is the Resolution switch. A four way switch, this works in tandem with the software and needs to be set at the same level.

On the side of the scan-head are two more switches: the one nearest the back defines to the software just what type of image you are scanning. You are given four options: three are set at Photo which are, in effect, the grey scale settings. The three different options here are dependent on the quality of the original image you have chosen for scanning. Although the documentation claims that Photo gives you 'newspaper type grey scales of dot density', the final output is going to be only as good as your printer can achieve. The Photo options are basically there for you to pick out a few details and if used properly will make life easier when it comes to touching-up the captured picture.

The final option on this switch is called Letter, but as there is still no way for the scanner to know whether you are running your hand over a picture of your favourite star-person or the collected letters of Boris Yeltsin, what it actually does is provide full monochrome with no scaling. This is the ideal setting for line drawings, simple cartoons or photographs of people you hate and have decided to make look bland when you put the images of them into the Yearbook or 'Wanted' poster.

The final control on the head is modestly called Start. A simple on/off job, this (obviously!) tells the scan-head that you are over the section of image you wish to be scanned.

Softly Software

Four controls leave the scan-head itself feeling light, which is fine by me as it makes long hours of work less arduous. You are not left with just three ways of getting the image right, however. The main power of the package comes with the software.

The Amiga 1000 isn't capable of auto-booting this so have Kickstart at the ready in order to get moving. If you've not got the 1000 then simply whack in the disk and off you go. The first thing you see are some dancing images, Mickey Mouse and the like, which is the product's way of showing off and telling you 'just how easy it is' – once you've become sick and tired of this, click on the left mouse button and on you'll go.

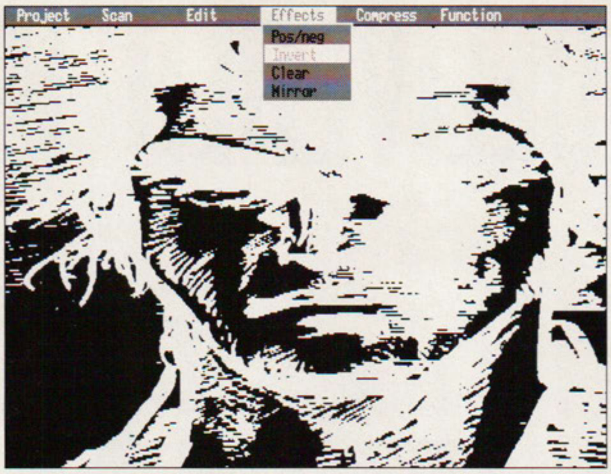
You will know when you are in business as the normal cursor icon changes into one of the scan head. While powering up the green scan light (positioned at the front of the scan-head) will have lit up for no apparent reason, as soon as the software has got itself sorted and is resident in the system, however, this light will soon extinguish and you will be ready for action.

Once everything is running, which might take a couple of attempts as the model used for this review did have a tendency to be petulant and fall over every so often, it's time for the first of many menus to pull on down! Because the bulk of the Amiga's screen is used to display the images themselves, this pull-down menu system was the only really workable option and it serves its purpose effectively enough.

There are six categories available to you in the form of Project, Scan, Edit, Extras (!), Compress and Function. The first thing to do here is bring down the Scan menu and inform the scanner just what width of image you wish to be captured. Five selections are available: 400, 640, 800, 1280 and 1600 pixels wide. Although it is tempting to go for the top whack every time, avoid this temptation. The optimum width is dependent on the quality of the original graphic, so trial and error are your best pals in the early stages of this operation – and most of the others.

Old Buffer

The next step is to set the number of 'pages' or screens you want scanned – from one to four pages. Because images are scanned to a buffer, the ability to scan and store up to four attempts can be a real time-saver. Each page consists of 20,000 bytes of data while the buffer itself allows



ABOVE: Reversing an image out from positive to negative is extremely easy.

RIGHT: Similarly, the software makes it easy to cut out and paste in different images, to provide a collage effect.





for ten times as much information, giving 200,000 bytes to play around with in the form of 2.5 screens wide by four deep. Screen memory and buffer memory are independent, which makes re-doing cock-ups that bit easier.

Once you have decided how many pagers you wish to scan it's time to get into details. Scan density is set from 100/200, 300 or 400 dots per inch and these settings have to be tied into those which you set on the scan-head itself. There is scope for experimentation by not doing so but only if you're really into fuzzy images with little definition. 400 dpi is no mean feat, by the way, and does provide you with some quite dapper-looking scans for later use. The company claim 95% accuracy in scanning with the 400 dpi.

Once you're all set up it's time to get going: in fact once you have selected the number of pages you require, the green light on the scan head springs back into action and it's down to you to press the start button.

Fiddle About

Don't use glossy surfaces, my old blind, deaf and dumb servant used to tell me, and she was right. Glossy images just bounce the light back up the hooter of the scan-head so, if you can, photocopy first or use matt images to begin with. The scanning itself takes little time and you don't have to have a hand steadier than Maradonna's to achieve clear results. Happily the scan-head is light and better still while a completely flat surface is best the scanner can cope with a normal desktop.

Once you are happy with the quality of the image on screen you can either save it direct to disk for later transfer or you can use the software's built-in editing tools. These include Cut, Copy, Paste, Mix and Brush. The two options can prove very effective by allowing you to paint a captured picture in full or part (just keep your finger on the mouse button) on top of other images, or to integrate a Letter with a Photo. Cut and Copy are straightforward in application, allowing you to tidy up your graphics and save data to the buffer for later use: for example (and if copyright allowed) you could put John Major's head on the body of Maynard Keynes. On top of this lot there is also the essential Undo command.

Effects abound but get boring after a while – there are only so many times you will want to see a black and white picture turn upside down (Invert), from left to right(mirror) or turned from black and white to white and black(pos/neg). You'll probably dabble here for a while before hoiking the scan into some beefier program for a real working over.

Basically, the software does the business effectively enough but with no great flair. You do have a deal of access to the buffer itself which is a boon for long hauls of work say, for example, when putting together a fanzine. The Compression facilities allow you to squash buffered information as well as that of the files which you are editing – in effect it is a 'size to fit' option which is rather lacking in any fine tuning.

Conclusion

Overall the Datel (or GeniScan as it comes to be known half-way through the rather flimsy manual) is a workmanlike tool. The hardware is light, easy to use and capabable of achieving some excellent results once you have worked out the scaling, angling of the head and equation of image quality to scan requisites. The manual could have done well to give some workable examples with the occasional screen shot but there you go, trial and error.

The software has been pepped up since version 1 (you now get the 400 dpi density) and once you've found your way around it will also produce some extremely effective visual delights. However, the main worth of the system lies in its ability to export images to sofware of greater editing strengths if you have access to such things. Finally, don't think that the images you get on screen will be matched by the printed effort. A nine-pin dot matrix printer will probably not do a great deal of justice to them and sadly there is no way of finding this out as no print function is included.

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GAME Busters

A veritable flood of letters has been arriving for Gamebusters this month – it was hard to find the Amiga underneath them all. Eyes down for a good cheat with **MAFF EVANS**.

SPACE ACE

If we've had one letter on this then we've had a letter on this. The number of letters sent in for *Space Ace* must reach well into double figures. Obviously it would be impossible to list everyone who sent in the solution, but thanks to you all anyway.



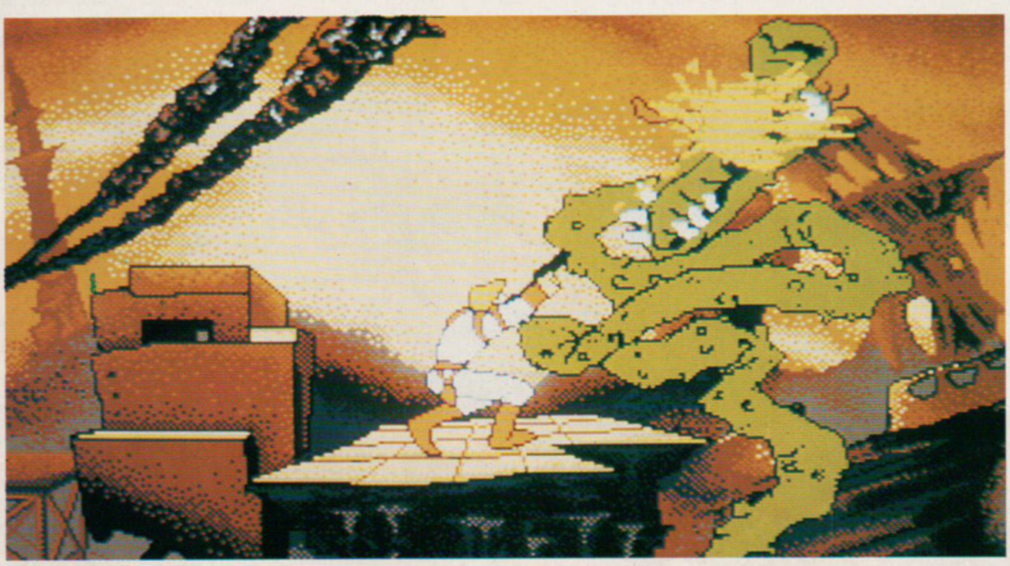
screen 1 ▲
– OUTSIDE BORF'S SHIP
A classic case of RTFM here. If you want to know what that means ask a parent or guardian, but it does have something to do with reading the manual.

screen 2
– STAMPING ROBOT
Just as you enter the screen the robot's right leg smashes down, so pull right to avoid it. Push the joystick left when the leg lifts up and left again when Dexter touches the floor with his hands. Now wait until the left leg lifts up and push left again to go past.

screen 3
– THE ROCK TOWER
When the drones fire at you pull back on the stick and push up when you stand on the rock.

screen 4
– APPROACHING THE SHIP
Push up before the shuttle disappears behind the horizon.

screen 5 ▼
– THE TRASH MONSTER
Press fire when the monster rears up frighteningly above you.



screen 6
– THE CRUSHER ARM
When the arm comes up after crashing into the water, push right. Press up as soon as you land.

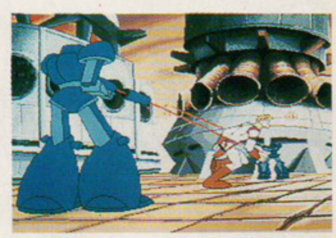
screen 7
– THE MOVING PLATFORM
Push right when the platform comes up for the second time. Once you are on the platform quickly push right to jump off.

screen 8
– PURPLE MONSTER 1
Pull back to come to a halt in front of the big purple-type monster then push right to escape.



screen 9 ▲
– PURPLE MONSTER 2
Again pull back to stop, then left to make good your escape.

screen 10
– PURPLE MONSTER 3
As soon as the monster's tentacle graps Dexter's feet, press fire.



screen 11
– THE WALKWAY
As soon as Dexter drops onto the walkway, push up on the joystick.

screen 12
– THE DOG CHASE 1
Push up as soon as the dogs come on the screen.

screen 13
– THE DOG CHASE 2
Push right as soon as you reach the crossroads to go that way.

screen 14
– THE DOG CHASE 3
Push up when Dexter turns around and sees the dogs behind him.

screen 15 ▲
–THE GUARD ROBOTS
As soon as Dexter appears between the two big blue robots push right to flee rapidly.

screen 16
– THE BLAST TUBE 1
Push left as Dexter reaches the tube to disappear down the tube.

screen 17 – THE BLAST TUBE 2
Again push left as Dexter reaches the end of the screen.

screen 18 – THE BLAST TUBE 3
This time move right as Dexter reaches the end of the screen.

screen 19 – THE ENTRY TUBE
Push up as Dexter reaches the ladder in order to climb up it.

screen 20 – THE FIGHT 1
As soon as Dexter and Borf appear on screen, press fire.

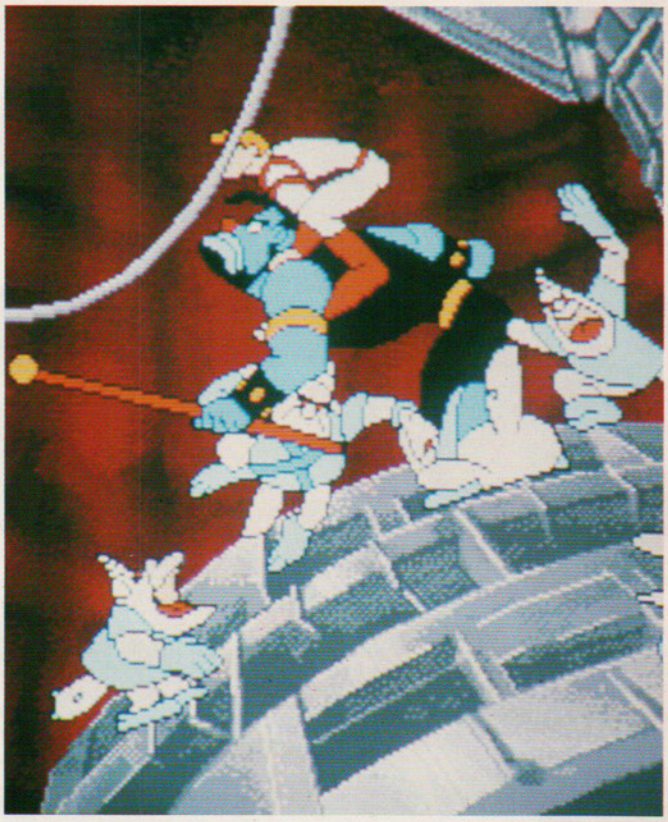
screen 21 – THE FIGHT 2
Press fire as soon as you appear to block Borf's blow.

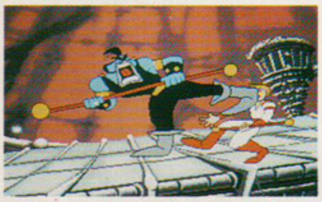
screen 24 – THE FIGHT 5
Just as Borf is about to hit Dexter with his staff press fire.

screen 25 – THE FIGHT 6
Push up to jump over the staff as Borf swings it, then pull down to duck the next blow.

screen 26 – THE FIGHT 7 (long fight this) ▶
Push right as soon as Dexter appears then push down to run behind Borf's back.

screen 27 – THE FIGHT 8 (it's almost as long as the one in *They Live*) ▼
When the screen changes to Dexter reaching out to grab the rope, push left. He will swing to temporary freedom.







screen 22 – THE FIGHT 3 ▲
Press fire when Dexter picks up his staff then push right to roll out of the way.

screen 23 – THE FIGHT 4 ▼
Press fire as soon as you appear then pull down. By this stage you may realise this'll take a while.



screen 28 – THE LAVA PLATFORM
Leave the stick alone and let Dexter drop onto the platform.

screen 29 ▼ – KIMBERLEY'S RESCUE
Just as the lava is nearly touching Dexter's feet push right.



screen 30 – THE APPROACH 1
As soon as this screen appears on your monitor push right.

screen 31 – THE APPROACH 2
When Dexter nears the turning is the right moment to push left.

screen 32 – THE APPROACH 3
As soon as Dexter appears is a very good time to push right.

screen 33 – THE LAST STAND ▶
When Borf fires the ray push left to shove the mirror forward. When you see the laser in the mirror push right.

Borf will now get a blast of the infanto-ray up the nethers and Dexter will have won. Off to the Pie Shoppe for a celebratory slap-up binge! Hurrah!



DUNGEON MASTER

There have been quite a few pleas for spell lists to this subterranean adventure, but unfortunately we haven't had any in... Wait a minute, what's this? Stap me vitals! It's a list of spells to that subterranean adventure *Dungeon Master*! That's handy, Harry, stick it in the oven...

POTIONS

VI – Increased Health
YA – Increased Stamina
YA BRO NETA – Increased Vitality
YA BRO DAIN – Increased Wisdom
OH BRO ROS – Increased Dexterity
FUL BRO KU – Increased Strength
ZO BRO RA – Increased Mana
VI BRO – Poison Antidote
VI BRO – Shield
ZO VEN – Poison (for throwing)

MISSILE SPELLS

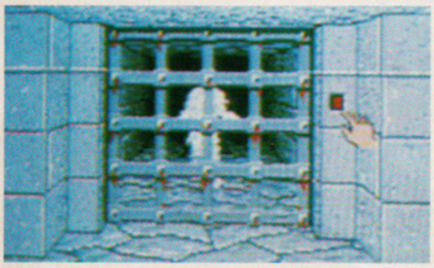
FUL IR – Fireball
OH VEN – Cloud of Poison
OH KATH RA – Explosive (similar to Fireball)
DES EW – Kills Spiritual Beings (eg Ghosts)
DES VEN – Poison

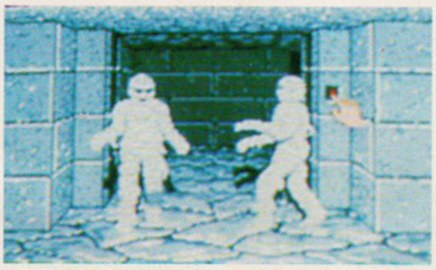
OTHER SPELLS

YA IR – Shield
OH EW RA – You can look through solid objects
FUL – Light
FUL BRO NETA – Spell Shield
ZO – Opens some doors
ZO RATH KA – Zokathra Spell

There are also a few spells the results of which aren't clear. These are YA BRO ROS, OH IR RA, OH EW SAR and DES IR SAR.

'Zeus'
Grange Over Sands, Cumbria

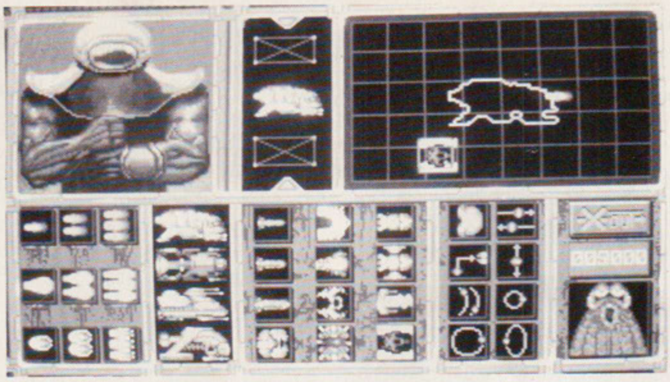






X-OUT COVERDISK DEMO

After Issue 8's Gamebusters revealed some amazing features of the *Infestation* Coverdisk demo which even we didn't know about, here's one for our Issue 8 demo, *X-Out*...



Corruption in the marketplace even goes on in outer space, it would appear. What am I talking about? Well, if you buy the item that has been picked up in the picture to the left and attach it to the ship it will cost you a cool 2000 smackers.

But if you then take it off and give it to the sales monster he will give you 2500 for it. If you put it back on the ship now it will cost you 2500, so get another one from the menu for more dosh!

DH Akehurst
Ingatestone, Essex

NORTH AND SOUTH

D Whittle starts his letter with tips for *North and South* with 'Dear Sir/Madam,' but I don't really think I suit that name. Imagine – called to the palace... the queen touches both shoulders and says 'Arise, Sir Madam'. Arrgh! Anyway, on with the hints...

THE START OF THE GAME

When playing a one-player game as the South, choose either 1962 or 1963 for an advantage. If, on the other hand you choose the North, then select 1964. To start a fair two player game then choose 1961, since both armies will then be equal.

Other screen options include the ship which will allow anyone owning South Virginia to gain an extra army about every eighth full move. However you have to be careful, as if you have any more than 12 infantry, 6 cavalry or 2 cannon, then you will be stopped from docking, which means you will be unable to gain the extra army.

For a slightly longer game choose the raincloud for when it rains over an army-occupied state. This will stop that particular army from moving.

If you're feeling adventurous, then choose the Indian – this will be explained later.

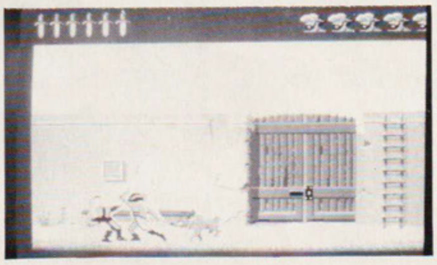
MOVING FROM STATE TO STATE

At the start of the game head for the counties with forts in them as they will open the train line, giving access to money for extra armies. You will also need to occupy the states between the forts with the train line going through it, otherwise it'll be like waiting for the delayed train from Bristol Temple Meads. Another important position is the port in South Virginia, as it could give an extra army just when you need it.

If you choose the Indians, then you will see to the West of the map an Indian and a Mexican. The Indian will attack any army that stays North-West of Texas for too long, which results in the loss of a whole army. The Mexican will attack you if you stay in Texas for too long, throwing a bomb which does the same damage as an Indian attack. These sequences are amusing if it's your opponent that's getting hammered, but a little worrying if your side is taking a beating!

If you are worried that an enemy army is going to attack one of your forts, then leave an army there. That way he'll think twice before attacking.

The more states you own the more money you'll receive, so remember to defend your states and try to corner the enemy in one state. Then he'll have to fight to the death, unless he's stronger than you, in which case he'll break free.





FIGHTING BATTLES

At the start of a battle, press the fire button until the meter at the top of the screen is full. With luck the cannonball fired should hit the enemy with an eye-watering blow!

If there is a bridge, wait until an infantry or cavalry is crossing: that way you'll kill two birds with one stone.

If the bridge has been destroyed and you want to get across to the other side follow the path that should be at the top or bottom of the screen. If you do decide to use the path, remember that it can only be traversed in single file, so if you send a full Infantry, only three men will survive.

At the start of the game try and send in your cavalry to slaughter the enemy artillery, infantry or cavalry as soon as possible. However, take care when confronting the infantry or artillery: they can fire at you before you reach them, so keep moving to avoid their shots. If you leave your artillery in one place, then the enemy will try to destroy it. If you see his meter rising for a shot, move your artillery straight away, then his shot will be wasted.

TAKING PORTS

If you have more forts than the enemy chances are you'll receive more armies than him, so try to take as many forts as possible at the start of the game and so reduce the number of armies he receives. To take a fort, you must move one of your armies into an enemy held state. Once you start moving, go to the top of the wall to avoid the dogs and the explosives. Remember to jump the gaps or you'll fall to the ground! If you see an enemy soldier heading your way, either fire a dagger or move to the top or bottom of the wall, then he'll pass you. Follow these points and you should take the fort in no time.

DEFENDING FORTS

You need to get a shot in as early as you can, so to appear at the same height as an enemy soldier, press either the up or down key. As soon as you appear loose off a dagger to stun him. If he fires a dagger at you then just jump over it. Once you have stuuned him, run up and keep punching him to slow him down. At the start, let your men attack him one after another and you should (hopefully) keep the fort.

TAKING TRAINS

As soon as the train sequence starts, push up to climb up onto the second carriage instead of the first. Make your way to the right, jumping the gaps between the carriages and avoiding the guards. When you jump a gap, loose off a dagger to stun a guard, so that he can't stop you from jumping. Once you reach the cab you will get the gold that the enemy would have received.

DEFENDING TRAINS

Defending a train is similar to defending a fort. When an enemy soldier jumps a gap between the carriages, send on a soldier and let loose a dagger. This should knock him to the ground so that he has to climb back onto the carriages. If you miss him with the dagger, then run up to him and attack him with your fists to slow him down.

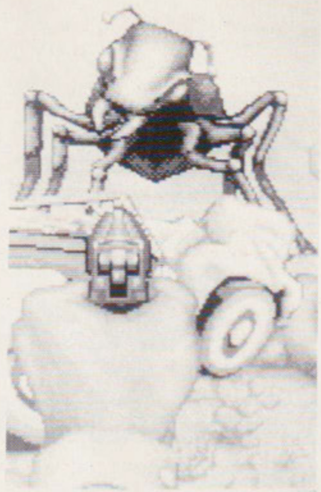
GENERAL HINTS

Always try to surprise armies when you can. Try to combine armies to increase their strength. Try to remember to leave Texas as soon as you can, otherwise the Mexican will get you! The same applies for the Indian – steer clear or you'll get it in the neck!

D Whittle
Newbury, Berkshire

IT CAME FROM THE DESERT

If you're overrun with insects then either get to the louse doctor or call Rentokill. On the other hand if they're only giant ants then have a shuftie at these playing tips.



All the evidence must be collected and analysed by Dr. Wells by June 9, otherwise the doctor either dies or leaves town.

The following table gives the dates, main sources and relative tips to use for specific evidence:

DATE	LOCATION	PART(S) FOUND	TIP
June 2	Jackie's Car	Body, Fluid	1
June 3	Home Base	Body	2
June 4	Cook's Stud Farm	Cast	
	Police Station Tape		
June 5	Ore Plant	Tape	3
	Quarry Fluid		
	Neptune Hall Fluid		
June 7	Ore Plant	Cast	
	Any 1st Ant Encounter	Body	4
	Any 2nd Ant Encounter	Fluid	4

The Tips (From the Table)

1 – Jackie's Car isn't found unless you are in your house on the morning of June 2. Let Jackie into your house and select 'Take Jackie to Car.' Once you are at the car you will find the fluid, but to find the body part you must select 'Investigate Scene Further.'

2 – This body part is delivered to your house by a neighbour. To get it you must be at home on the morning of June 3 and you must answer the door.

3 – You are given the tape the second time you go to M-2 on June 5. The first time you are stopped by an ant.

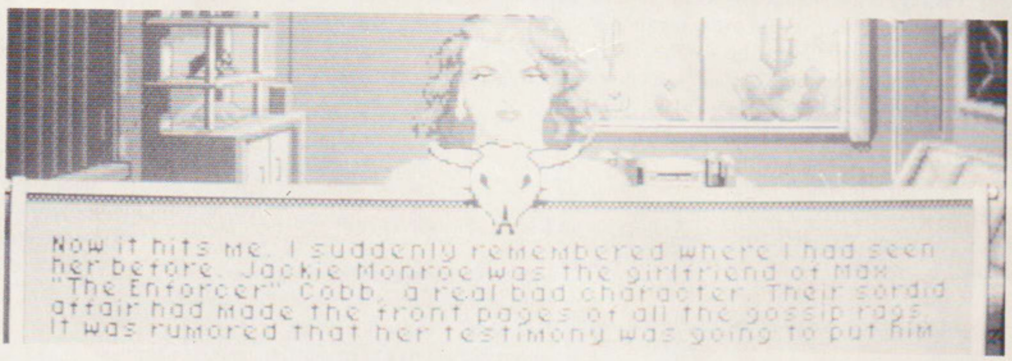
4 – To collect either of these pieces you must kill the first ant and then go on to destroy enough ants to scare off the rest.

GENERAL TIPS

To collect the body part and the Fluid on the first day, first go to JD's farm, then go to the South-West Cone. If you do this without answering the door first, you can take the evidence to Dr. Wells for analysis.

By June 6 the ants will go into hiding and all ant activity stops until the main attack on June 9.

Mines three, four and five, the pump-stations, the North Cone and the North-West Cone are all dead-ends and nothing ever happens there. Ignore the strange lights you hear about – they're just red herrings.



The nest is below M-1, but it is impossible to enter before the main ant attack.

To beat Ice at playing chicken drive on the left-hand side of the road and steer to the right at the last minute – but DON'T press fire. Ice should steer around you. It may take a few attempts until you get this right, as it is quite difficult.

Winning a knife-fight is one of the easiest sections. All you have to do is repeatedly stab and swipe by pressing fire and up followed by fire and right. Get it right and your opponent rarely hits you.

Try to avoid fire-fighting wherever possible, as it's the hardest of the sub-games – so don't pick up the red rock at the start!

If you stay in hospital you may miss a vital piece of evidence, so here are a couple of methods of escape:

1 – Grab a wheelchair as soon as you can and take it down the lift. Barge past any nurses or orderlies and rush past the guards.

2 – Sneak your way from room to room towards the elevator or stairs. Once downstairs carry on sneaking until you get to the bottom right hand room. Walk up to the guards and get their attention before going back to the right hand room. The guards should go past, leaving you to sneak out of the room and rune through the doors.

Towards the end of the game the mines and South-West cone may be destroyed. If this happens you can only get into the nest by plane. Fly to M-1 gassing any ants on the way. When you reach the mine fly a little to the left and turn round to land on the dirt track. Now you're ready for the nemesis!

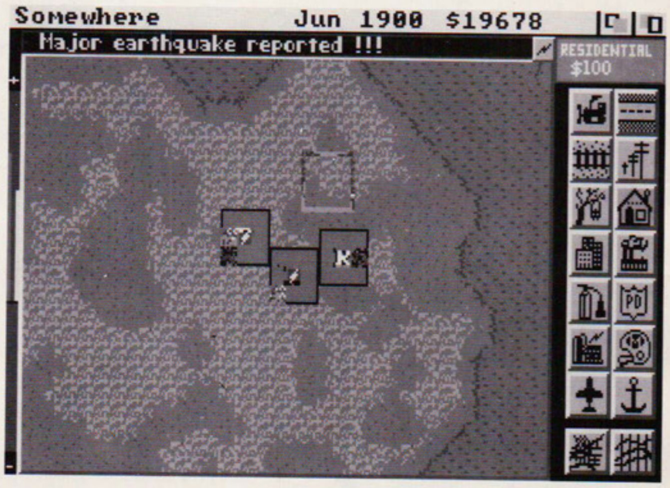
Stephen Powell
Tromode, Isle of Man

SIM CITY

To bring even more realism into this simulation, you can become a greedy and bitter official by embezzling money from the authorities. If the old kitty is looking a bit sparse, hold down Shift and type FUND. The pot will go up by $10,000 each time. After a few goes, this causes an earthquake, so it may be an idea to stock up your dosh before building anything.

"Gold? Gold! And it's all mine! HahahahahahaHAAA!"
"Do you think we've got the right man for the job?"

Phil White
Walsall, West Midlands



PRIZE WINNERS

All you people that sent in *Space Ace* solutions and expect a prize, I'm sorry, but there were just so many of you that it wasn't fair to award the prize to one person – and we can't afford to give away about 30 software vouchers in one month! So the prizes this month go to Stephen Powell for his hints on Cinemaware's *It came from the Desert*, D Whittle for his *North and South* tips and the man with the strange moniker 'Zeus' for the invaluable spell guide for *Dungeon Master*. Fifty-quid vouchers will be on their way to these lucky winners soon!

POWER COMPUTING

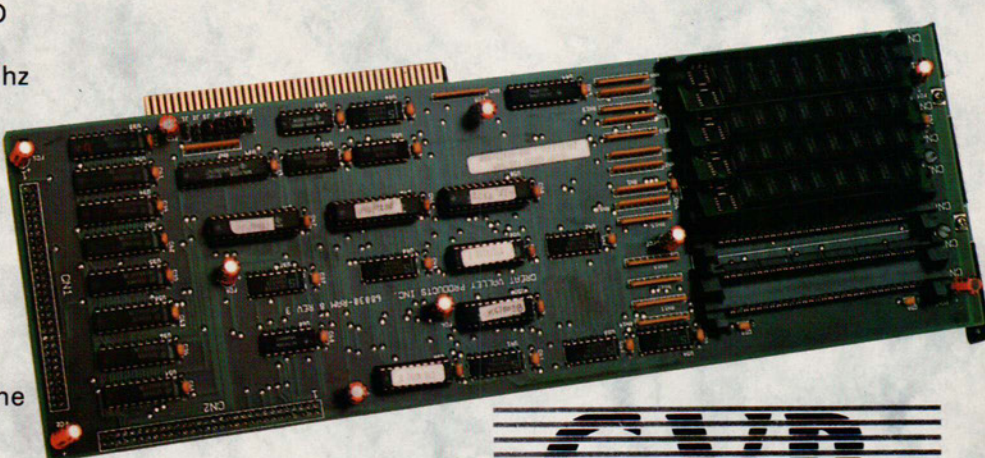
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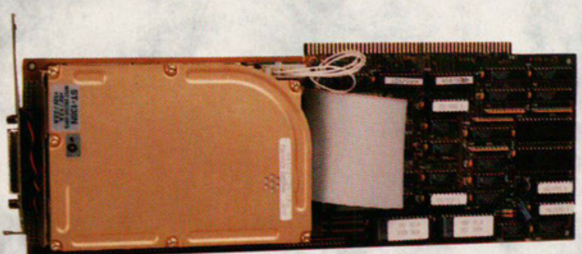
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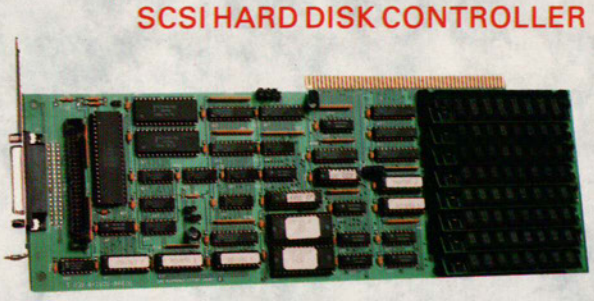
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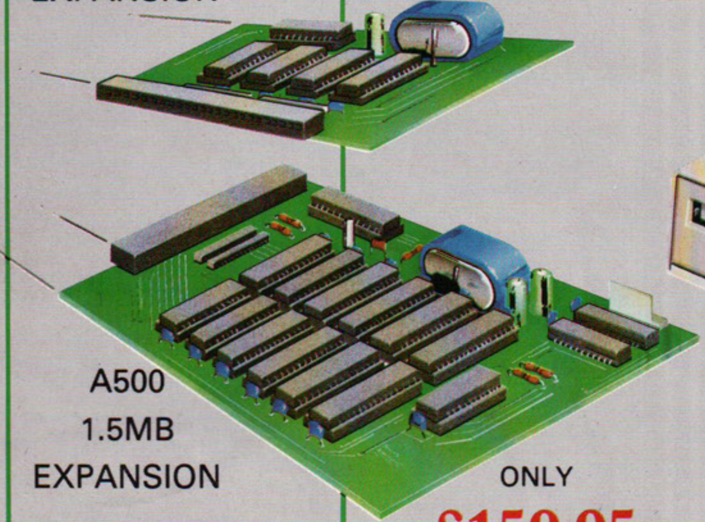
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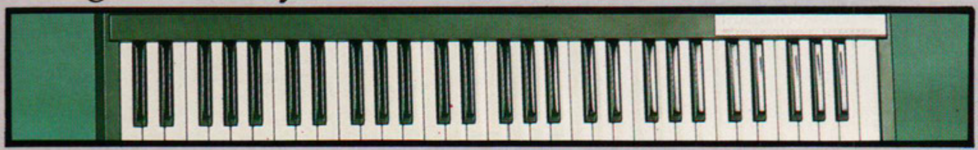


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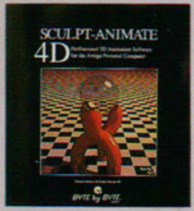
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Letters

A host of golden daffodils – errm – a host of your letters escape the wiles of the sinister Japanese paper-folding genius **BOB FANCHU** and make it into print. Send your raw materials to 30 Monmouth Street, Bath, BA1 2AP.

KINKY BOOTS

PRIZE LETTER

I have an Amiga 500 and have discovered a number of corrupted disks in my collection. With a few exceptions these are all originals, or magazine or Public Domain certified disks. I would like to offer a cautionary tale to others who discover their prized collection is full of errors or corrupted disks.

Don't assume, just because a disk comes from a manufacturer and you break the seal yourself, that it is virus free. How easy would it be for a malicious person to deliberately leave a virus to cause havoc? Check your disks!

Are the software companies even aware of the alarm caused by non-standard bootblock messages flashing on the screen, particularly for new computer owners?

Please don't write programs that behave in this way – everyone automatically fears the worst and begins to wonder where the disk was infected. Accusations fly thick and fast as partners blame each other: for buying games untried? Through mail order? From the sale bin? That scruffy shop? That posh shop? Was the seal broken? Did the assistant get the disk from the back room? Surely you didn't buy it from that shop which allows yobbos to *X-COPY* their own disks on the display machine? Did you run it through all the virus checkers before use? Was the write-protect ever left off?

Would the software companies please use standard bootblocks only: then we do not have the alarming messages of 'non-standard bootblock' and should a virus ever damage a bootblock we can rewrite the bootblock with the industry-standard one and still use the program.

Wendy Stokes-Clare
Nesscliffe, Shropshire



Why can't software houses stop using strange boots? See 'Kinky Boots'.

TROUBLE IN THE MAIL

Last November I sent £17.90 to Megasave for the game *Bomber* to give to my grandson for a Christmas gift. The cheque was cashed within three days and all I have received after waiting four months has been a letter from the liquidators of Megasave stating that the company has gone into liquidation. They owe £51,444, £28,812 of which is owed to 1,762 Mail Order customers, who will not be able to recover any of the debt.

My advice is not to trust your money to Mail Order companies that use a box number address without a phone number, and never part with your money unless the item you want is in stock.

To advertise a disk for sale long before its release date is widely practiced in many computer magazines, so if you must order in advance make sure it's from a company you can trust.

G L Murray
Bexleyheath, Kent

SHANGHAIED

Please, please help me! I am a very new owner of an Amiga 500, and having sold my Commodore 64 and games I am desperately trying to locate *Shanghai* for Amiga 500. I am getting dreadful withdrawal symptoms – and my daughter needs a copy too. So two copies would be even better – but I will settle for one.

You are the only one left to help – Activision do not have any left – I MUST get *Shanghai*!!!

Mrs P G Chambers
Par, Cornwall

If Activision are all out of copies your best bet is to check out the Public Domain for a copy. Why not give one of those nice people listed on our PD Update pages a ring and see if they can help you?

FORTY-SOMETHING

As a guy that has been confused and amused by this thing called an Amiga for nearly three years now, I thought I'd send you my list of favourite games, although some more recent Amiga owners may not have heard of some of these.

1. *Kick Off*
2. *Shanghai*
3. *Amiga Basic!*
4. *Solitaire Royal*
5. *Pagesetter 1.2*
6. *Deluxe Paint II*
7. *MED* (from your Coverdisk)
8. *Analyse*
9. *Leisure Suit Larry*
10. *Sonix*

No 'shoot-em-ups' here, but rather than slag those off as mindless alien bashing they are, in my opinion, more a test of reactions and memory – which at my age (42 and 3/4s) are somewhat lacking. The embarrassment of having my hard-won top score being beaten by the average 14-year-old within 15 minutes of sitting behind the machine is too much for me.

My wife also plays *Shanghai* or *Solitaire* whenever possible so some women do like some computer games.

Greybeard
Harrow, Middlesex

THE CRUNCH BUNCH

I have been trying out my dated file cruncher on the Coverdisk of Issue 8 of *Amiga Format* (the most fab, brill, excellent magazine for the Amiga). I managed to save about 22K and all the files still worked. I was wondering why you don't use a more up-to-date cruncher – you could save yourself a great deal of disk space.

In this space you could put any small PD program or demo. I noticed that *Ultrapaint* was crushed and that saved you 36K. This makes a total saving of 58K. In that space you could put a crunched *Xoper* directory.

Wise up and do what the opposition do. I am sure many of your readers would be grateful.

Jason W Gordon
Wallington, Surrey

We don't use a cruncher on everything because it can cause problems with some programs and they will not always show up straight away. We use it where we are sure it is safe. It's also worth noting that some programs actually take up more space when crunched.

DTP FOR COVERDISK?

I have been reading *Amiga Format* since Issue 1 of the then *ST/Amiga Format*, and in general have enjoyed many of the progs issued on the Coverdisks. However, in all that time there has never been a Desktop Publishing program included on the disk.

I see the Coverdisk as primarily a chance to try various different types of software that I have no experience of, and then if I like the look of them I look around for the

Are film licence boxes really tastier than the products they contain? See 'Chewing Cardboard'.



best commercial example to purchase. This is true of the *MED* program on *Amiga Format* Issue 7.

I was very impressed with that program, and it has opened up another side of the Amiga for me. I feel the same about DTP, I have always been interested in it, but have been reluctant to invest a large amount of cash to 'experiment' with it, so please consider a DTP program for inclusion in a future Coverdisk. I do think that it is a waste of disk space to provide a playable demo of yet another shoot-em-up when we are all familiar with that vein of entertainment.

Stuart Hunter
Edinburgh

Sadly we have never been able to get a demo of a DTP program because most of them are written in the US. If we get a chance, though, we will run one.

TOP TEN TIME AGAIN

Here is my list of Top Ten games (which I own) of all time.

1. *Virus Killer* (Practical) – worth its weight in gold.
2. *Tracksuit Manager* (Again, Again) – one of the best footy games around.
3. *Austerlitz* (PSS) – for budding generals everywhere.
4. *Sim City* (Infogames) – gives you the power of God.
5. *Battlehawks 1942* (Lucasfilm/US Gold) – as least as good as the actual old film coverage ever managed to be.
6. *IK+* (System 3) – a fast and frenetic beat-em-up against aggressive opponents.
7. *Elite* (Firebird) – a VERY big universe provides months of trading/blasting.
8. *Sentinel* (Firebird) – still very original.
9. *Graphic Adventure Creator* (Incentive) – an excellent and easy to use adventure writing utility.
10. *Zoids* (Martech) – has stood the test of time, still very playable.

Stuart N Hardy
Wales, Sheffield

SELF-HELP FOR HANDICAPPED

I was down the paper shop and started to talk to a lady who was saying that she had a wheelchair bound son who has an Amiga that he uses for entertainment.

Well, my brother is also in the same situation and is also a lonely child as he cannot really go out to play with the few friends he has.

The lady in the shop said that her child (age 15) was in the same position as my brother (age 11). Going by this there must be a hell of a lot of children and adults in the same situation.

So I was thinking of trying to start a special club for these people where they could write to each other via their Amiga and send each other disks. Also they could be supplied with games/utilities from the PD library at no expense, as most of these children cannot afford to pay for any form of software let alone full-priced games. So, two things I wish to ask.

1. Can you ask all handicapped people who wish to take part in this to contact me without hesitation at the address below either by letter or by disk.

2. Is there any Amiga user willing to help or donate useful PD disks for the Handicapped Club? Please note that no money will be payed out or accepted by either the users or operators of this club. I hope this club will be successful and help the handicapped stay in contact with each other and be of help to them.

If you have any advice on this it will be much appreciated.

Neville Tanner
10 Grantham House,
Friary Estate, Peckham,
London SE15 1RN

CHEWING CARDBOARD

When I first got my Amiga, over two years ago, I said to myself that I would not accept pirated software. I kept this view until someone I knew offered me some stuff. At that time I could not afford to buy originals and welcomed the opportunity to copy software. I had forgotten my resolution to buy from the shops.

Eventually I became as selfish as all other pirates, not caring about whether what I was doing was damaging other people's income (either the programmers, or the poor sods who had to shell out £25 a game). Piracy is a very selfish business, there is no question about it. Groups should put their computing expertise to use, and get paid for it, not just write bouncy, scrolly, boasty intros.

The world of your new Amiga may seem an expensive one, but do not turn to piracy to avoid the cost. Save, and buy the best software you see. That way people will stop writing shit, and begin to code quality software.

Oh, and avoid film licences: they are always without exception (except maybe *Batman*) total rubbish. You will get more enjoyment from eating the box of a film licence than playing it (and wasn't *Robocop*'s box tasty?)

Sam Carrington

GOOD OLD DAYS

PRIZE LETTER

What's been your most enjoyable game? I know mine – it was *Atic Atac* on the Spectrum. Why? Well, back in the good old days when computers were a 'new thing' to the home user, nothing quite like them had been seen before. Games such as *Atic Atac*, *Manic Miner* and *Jetpack* amazed everybody who saw them. They were instantly addictive and totally playable. "So what's different now?" I hear you cry.

The point I'm trying to make is that something new always draws our attention. However, through time, people start to look elsewhere for their 'kicks'. I personally have owned a Spectrum and a C64, presently owning an Amiga. While owning a Spectrum I would play virtually any game, on the C64 my choice narrowed down, and with the Amiga only really two types of games – puzzle solving and role-playing. Nowadays, shoot-em-ups, beat-em-ups and the like simply do not 'turn me on'. Many many people I know also share the same viewpoint.

To conclude, I think that during the following years shoot-em-ups and the like will become more unpopular. Games which do well will be the puzzle solving, strategy and RPG types (games requiring a little thinking power have always done well). I feel that games which will do particularly well will be the most original – a good starter for us here is *Populous*.

Denis Cowie
Cleethorpes, S Humberside

The death of the shoot-em-up as the mainstream game type is long overdue. There will always be room for them and the other unoriginal games, but it's time the new generation took over.

QUICK QUESSIES

1. What does an assembler do?
2. Can you buy *Journey's End* (Mastertronic) for the Amiga?
3. Which virus killer is best?
4. Which is the best Database?

Scott Moncrieff
Corstorphine, Edinburgh

1. It assembles a program into machine code.
2. No.
3. Generally the most recent one, Virus X 4.0 *from last months Coverdisk should do you.*
4. Check out Page 91.

VIRUS SCHMIRUS

As soon as your issue with the cover-mounted *X-Out* demo arrived I eagerly opened it and loaded it. Good stuff, except your disk had just given me the 'Lamer Exterminator' virus.

I didn't notice this until a mate borrowed the disk and found that he could not copy anything. A message kept coming up saying: "Unknown virus in Bootsector". The beast had spread onto three

of his disks and five of mine.

Luckily the *Pseudo Ops Virus Killer V2.0* wiped out the virus and saved me from shelling out for new software. Please could you tell how on earth I was the unlucky sod who managed to get a virus from your disk as I am constantly wondering WHY ME??

M Cadier
Folkestone, Kent

You could not have got a virus from the Coverdisk. Our checking procedure is very thorough at every stage and our custom boot-block guarantees it is virus-free when it gets to you.

HACKED OFF

All right you SCUM, you VERMIN, you bunch of HYPOCRITES. You see yourselves as the totally law abiding magazine with not a hacker in sight. Then why, may I ask, are you advertising (as an invaluable purchase) the Hacker's Handbook. I hope you can explain yourselves otherwise I will make you listen to the *Xenon II* soundtrack on the ST (yuck) all day!!

James Burrows
Eye, Suffolk

The Hacker's Handbook was so named before 'hacking' became a dirty word. It does cover subject matter that is potentially illegal in its application, but it's actually of most use to those trying to stop people getting into their computer systems.

ABSOLUTE BEGINNER

Could you please answer my following questions :

1. Can all viruses be removed by using one particular killer disk? If not could you suggest which disk or disks I should purchase?
2. Are these disk killers easy to use?
3. Should I be careful of which PD software I buy?
4. Could you suggest any good educational books on the Amiga?

As you see from the above questions I am a beginner and would be grateful if you could help.

J Massey
Wrexham, Clwyd

1. No. Viruses and killers are virtually continually updated, so just keep gettign the most recent one.
2. Yes.
3. Always be careful with any disk from an outside source.
4. It depends what you want to learn. There are an awful lot of books – we may do a round up.

LANGUAGE BARRIER

Although I am currently enjoying Dave Jones' series on Amiga games programming, I think many of us are at a disadvantage as we cannot compile and save the code that Dave has generously provided. Neither the *Devpac* assembler from *ST/Amiga Format* or the *Argasm* assembler recently provided have the necessary 'include' files to allow us to compile the code. Perhaps here a good PD assembler may be considered for inclusion in a future issue.

Still on the subject of assembly language, I am a computer systems manager, and have written programs in 4GL, Pascal, Fortran and a couple of others. Assembly language has always eluded me, however, as I have never seen an adequate beginners' tutorial about 68000 machine language, other than the odd short series which lasts a couple of issues.

I would welcome a course in assembly language which was practical rather than explaining what each instruction does. Perhaps the first month you could start off and have a simple article on printing a message on screen, and in the coming issues on how to open a custom screen, and maybe designing a simple sprite and getting it to move very simply on the screen. The point, I think, is to have something that is achievable every month to keep the interest in the subject.

Perhaps this tutorial could even be based along the lines of The Very First tutorial that comes with the Amiga. I have always thought that having a disk on a magazine was an excellent way of teaching new skills to readers.

Stuart Hunter
Edinburgh

LITERARY PRETENSIONS

As you are in a position of offering wonderful Amiga goodies I hereby claim mine for submitting to you an original and ridiculous piece of literature.

There's only one thing – are you man enough to print it?

Jem Barrett
Northampton

1. No.
2. Definitely not.
3. Errm... that's it.

FRUSTRATED PROGRAMMER

I've been the proud owner of an A500 for several months now, and after finally getting my jaw off the floor and enduring several hours of plastic surgery just to get that gob-smacked 'Wow! How does it do that?' look off my face (it leaves my old CPC464 standing) I have seen many demos, heard many tunes and seen many a sane and rational person driven MAAAAAD with envy (HeeHeeHee!)

But now I want to have a go myself – I want to make my own mega demos, I want to make things go flying around the screen going ZZAAP! PING PIIIOOOINNG! and I want a Ferrari parked outside my ski lodge in Austria (OK, OK – maybe next year!)

Anyhow, to the point – where do I start? How do I get control of the blitter? What exactly is a copperlist?

What I really need is a couple of decent books on machine code programming on the 68000 (for the beginner). I've programmed in BASIC for several years, PASCAL for several months, and I've scratched the surface of assembly on an 8-bit. Now I want to get down to the nitty-gritty of serious power programming, but I need some books to show me how. I am following Dave Jones' course and I'm finding it very interesting, but I want to know more. Are there any books you recommend?

Daniel Hopkins
Caernarfon, Gwynedd

Jason swears by Abacus' Amiga Assembly Language Programming which will teach you the fundamentals of programming in 68000 assembler. You'll also need a good book on the Amiga hardware. The two which Jason recommends are Addison Wesley's Amiga Hardware Reference Manual and Abacus' Amiga System Programmers Guide. All three books are available from Adamsoft on 0706 524304.

WHERE'S MY PARADROID?

I own a 1 Meg Amiga and I read your magazine every month. One of the great things about *Amiga Format* is the amount of letter pages. So much can be learnt from other people's letters.

Now, on to my list. Over the years I have owned quite few computers. Below is a list of the 10 pieces of software that I have used most.

1. *Paradroid* – 64
2. *Kick Off* – Amiga
3. *Elite* – 64/Amiga
4. *Kindwords v2.0* – Amiga
5. *Blood Money* – Amiga
6. *Batman: The Movie* – Amiga
7. *Deluxe Paint III* – Amiga
8. *Populous* – Amiga
9. *Robocop* – Amiga
10. *Gridrunner* – Vic 20

Oh, and by the way, could you please tell me when the Amiga version of *Paradroid* is coming out.

Robert Sadler
Halesowen, W Midlands

Paradroid is being worked on and should be out in a few months.

QUICK QUESSIE 2

I have a query. In *Amiga Format* Issue 8 I read in your Letters pages about being able to externally upgrade my A500 to 8 Meg. Is this true? If so, does it mean I will be able to run software that requires 3 or 4 meg of RAM? If so, how much will it cost? Where will I get it from?

Stephen Stairs
Moulton, Northants

Yes it does. Check out the ads.

DISABILITY ALLOWANCE?

I am a newcomer not only to your brilliant magazine, but also to Amiga computing itself. You see, I have recently become disabled and can only move one arm. After 7 months in hospital I was given an A501 as a gift. The kindness of friends and charities have provided a 2nd drive and printer.

This brings me to my main point – it's all very well having the equipment, but it becomes redundant when you can't afford the software. I have to rely on state benefits to support my wife and 2 very young children. I cannot throw my money away on software which may turn out to be total crap.

I know your feelings on the issue, but I find 'pirate' disks to be a way of reviewing software personally. I cannot say I favour these crackers but I really have no choice. In a similar vein, I have to say some of the PD utility disks are very good, and provide someone on a limited income the means to build a useful library.

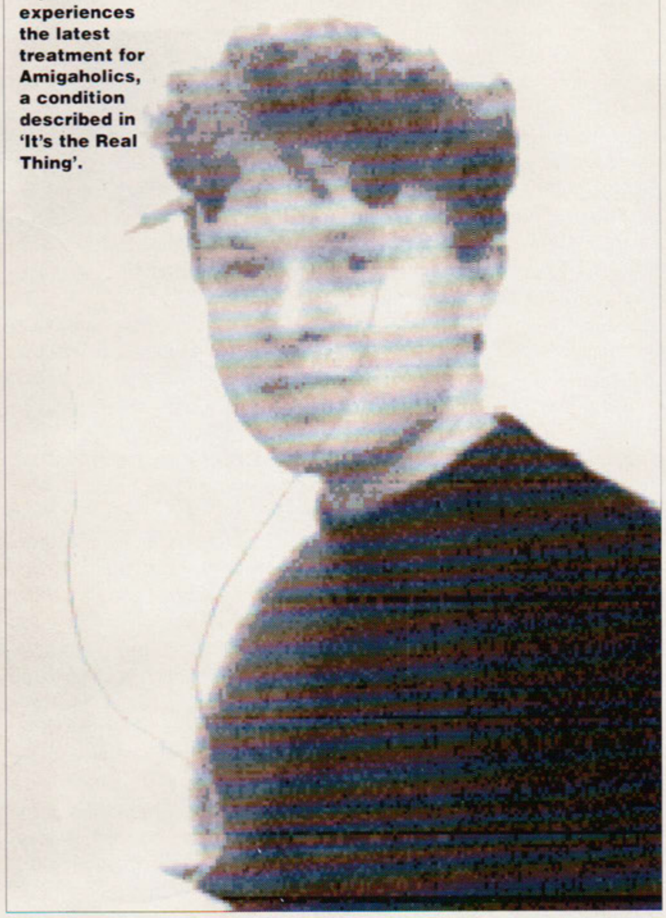
On a serious note, I would like to delve deeper into the Amiga's capabilities. Can you recommend a good, easy, and cheap programming system – also, do you know of any company selling guaranteed second-hand equipment such as midi systems, hard drive, flatbed scanners...?

Dave Winder
Sutton, Surrey

JOIN THE UNEMPLOYMENT CLUB

I am writing to you regarding User Groups for unemployed computer enthusiasts. I was involved in such a group in Dublin which catered for all the popular makes of computer. The group was divided in sections i.e. ST, Amiga etc.

The group was a huge success with over 250 members in Dublin alone. We set up a Public Domain service for each of the formats catered for, started a virus checking service, held meetings, outings etc. We received great



A patient experiences the latest treatment for Amigaholics, a condition described in 'It's the Real Thing'.

support from computer shops etc receiving free games, blank disks, stationery and publicity.

I would love to set up a group here in Britain. Each of the formats would have its own section run by a small number of dedicated users. If possible these would then set up their own PD and information services and a newsletter would be produced. I would also hope to include a *Dungeon Master* and *Chaos Strikes Back* column, users' ads, help column and a section for each computer.

To set up such a large User Group we would have to make a small charge to members to cover mailing, PD software, putting together and printing of the newsletter. Although primarily for low-income and unemployed users, any computer owner would be quite welcome to join.

Other aims of the club would be: presenting home computers as useful tools in everyday life and not just for playing games on; dispelling the 'my computer is better than yours' syndrome; making life a little easier for unemployed/low income users; encouraging members to put their computing skills to good use (by holding competition to produce programs etc); providing information regarding courses, equipment and software, and help for learning new skills and development of existing ones.

I would be very grateful if you could print my letter in your excellent magazine: I would also be very grateful for any support your magazine may be able to offer this venture. If any of your readers would like more information or would like to join this club please do not hesitate to write.

Paul Matthews
2/6 West Pilton Crossway,
Edinburgh EH4 4ED

BULLETIN BOARD

You invited your readers to send in details of their bulletin boards in Issue 7, so here goes! "The Isle of Avalon", tel 01-659-5732 from 9am to 9pm (the daylight hours!) Speed available are 300/300, 1200/1200, 2400/2400. We have an Amiga area which includes the Amiga Echo (worldwide messaging), files, letters, plus on-line games, an agony aunt, a BBC area, a PC area, an international general messaging facility and fidonet mail. The board uses ANSI graphics (optional) and supports all popular file transfer protocols.

Steve Linkstead
Horsham, Sussex

MAD ABOUT MASTERSOUND

I am writing to complain about the Coverdisk on Issue 7. The specific reason that I bought this magazine was solely because of the *Mastersound* demo. When I got home and loaded the disk a message appeared on the screen demo. When I got home and loaded the disk a message appeared on the screen saying that I did not have enough memory as I only have an A500.

If I had known this was going to happen I would not have bought the magazine but as it wasn't printed on the cover, disk or Index I assumed it would be compatible with my computer. I feel that the fact that I had to flick half-way through the magazine as well as reading it to find this out is a bit much to ask when you are in the local newsagents.

As I cannot return the magazine to my newsagent I feel that a refund is not unreasonable or some other sort of recompense for my wasted money.

Barnaby Grubb
Sittingbourne, Kent

It does work on an unexpanded A500 – just make sure it is the first thing you run after you have booted up the disk.

IT'S THE REAL THING

John Gigney (Letters, *Amiga Format* Issue 8) has a good point. Every Amiga fan knows that a session at the console is totally riveting. For long stretches. (There have been a million meals-gone-cold to prove it.) That intense level of prolonged concentration must be mind-shaping. Especially as it is so enjoyable as well.

So the subject matter we're soaking ourselves in can be a pretty important question. We just can't help being influenced by it.

On the Amiga it's so real you have to get the answers – or feel like a bad parent. So you sharpen your eyes, without noticing it at first. And before long, accurate observation of reality becomes a day to day habit; and a pleasure in itself.

We're Amigaholics, that's for sure. So we reckon we might as well be addicted to a better understanding of the real creatures we share the world with.

Robin Bilson
Buxted, East Sussex

SAVE MY GAME

I would like to air a point regarding games software that uses the master disk to store player's games on (ie CRL's *Lancaster*). This is simply stupid as it will increase the likelihood of software companies being sent faulty returns as well as leaving software vulnerable to viruses as the write protect tab has to be off.

May I also suggest that saved games should use the operating system of the host computer so that if we have ten games we do not need ten different disks.

If software companies adopt weird formats to save player's games hoping that this will stop users editing the saved games (as in the *Dungeon Master* Editor software) then why not use an encryption alogrythm instead?

Surely, adopting these suggestions would save software houses money in dealing with complaints and faulty returns as as well as save users money by having to buy less disks to put saved games on. Perhaps it is a conspiracy from the blank disk manufacturers? I think we should be told.

Mike Pearson
Inverkeithing, Fife

BEGINNER'S LUCK

Congratulations on another excellent issue (Issue 7, Feb 1990). At last there is an article for beginners ('Taking Control'). Many thousands of Amigas have been sold and a high proportion of these must be for beginners, like myself. I am sure that I am not the only one who finds a lot of what is written to be totally incomprehensible simply because we don't understand the terminology or the procedures.

This is a pity because not only are we missing out, but a lot of what you publish and also put on your demo disks is totally wasted. So please can we have more articles directed at the beginner explaining in idiot language the terminology etc. Then, perhaps, we can get the full value from our Amigas – and from your mag.

In your recommendations for programs for the new owner, I was surprised at what appears to be an omission. You make no mention of the brain teasers which can be played against the Amiga. I am thinking of such programmes as *Scrabble*, *Chess*, *Shanghai*, *Solitaire* and others. I get many hours of pleasure from these.

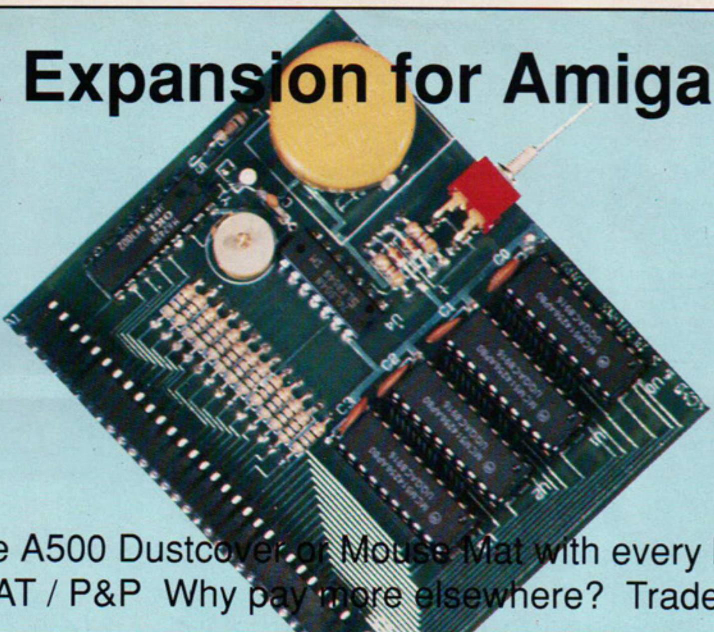
D W Joslin
Bridgwater, Somerset

We try to vary our coverage, most of it aimed at the average user, but some aimed at experienced users and some at beginners. We shall continue to do so.

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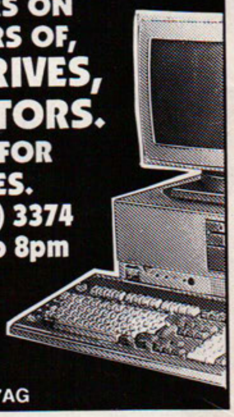
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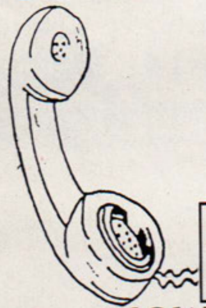


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Hospital Special Baby Care Unit Trust Fund (Our local hospital).

This charity event will take place at Mansell Chair Frames Ltd, Unit 1 Charfleets Industrial Estate, Canvey Island on 26th May, starting time 9 am – and we finish on Sunday at 3 pm.

Some Computer companies, like CDS Software, Electronic Arts, Mirrorsoft, Thalamus and Mindscape International have donated us some games and we are very grateful for them. We have a variety of computers at the Computathon, including IBMs, Amigas, Segas and Nintendos. All we need now is some more people aged approximately 15-16 years old, of any sex or culture, who are willing to use their own computers, get sponsors for £150 minimum and stay up for 30 hours!

Please print this letter straight away, as we hope to get a group of people together well before the date and give them time to get sponsors. I will reply to all letters, and will meet up with the people that I feel are good enough!!!

Neil Mansell
53 St Marks Rd,
Canvey Island, Essex SS8 9NJ

ASSEMBLER CORNER

I have very little reason to say anything adverse about your magazine, except concerning the "Dave Jones Series".

I am very pleased to see this kind of addition to the magazine, but unfortunately the source code given on the disk is of no use to me since I use the *K-Seka* assembler/debugger – which will not even allow me to edit the source, let alone assemble it.

Is it possible that you could include a version which I may use, with or without the comments? I'm sure there must be many people with the same difficulty I have.

Finally, it may be a good idea to have a section which is entirely for the assembler users, consisting of programming hints and routines – supplied by the readers and/or games programmers (such as Dave Jones). *Sinclair User*, which I used to read in the days of my Spectrum, had such a feature and was very successful.

Matthew Barker
Weston-Super-Mare

Devpac is generally accepted as the Amiga industry standard assembler. If you do insist on using K-Seka *(you're a brave soul!), then converting the source code to* Seka *format is simply a matter of removing tabs and substituting the Devpac assembler directives for their Seka equivelents (which is easier said than done, I'll warn you now!)*

LESS IS MORE

As an Amiga user to be, I feel justified in writing to an Amiga magazine at last. After congratulating you on a great magazine I want to address a point to Roger Barefoot, who wrote to you about flight simulators a couple of months ago.

In his letter he complains of a lack of ground detail in the latest flight sims. Fair enough, but in the newest experimental military flight simulators the ground graphics are being generated with *less* detail, the idea being that by creating the picture with blocks of colour the eye is tricked into seeing detail that isn't there. This also enables the speed of the simulator to be increased without detracting from the visuals.

Finally, a question about this Amiga that's arriving on my doorstep in a few days time. I have been told that the Amiga does not support a proportional joystick. Having tried to play flight simulators with switched sticks on my old BBC 'B' I can imagine that, despite the fantastic graphics and sound, it will almost be a downgrading from my Beeb in the control area. I would be glad if you could prove me wrong.

Philip Lundsay
Belfast, N Ireland

The Amiga can support a proportional stick but the software usually does not.

NO PROTECTION

I refer to the recent attention drawn to software piracy or 'hacking'. In my opinion, the very existence of the hacking groups is a direct consequence of the software companies.

If the software companies did not protect their products then the hacking groups would not even exist at all and these people's talents would be put to a far more constructive use. Obviously, the software would be copied more easily, but perhaps to a far lesser extent than if circulated by a large hacking network of groups. Most people, I feel, would much prefer to own the original copies complete with instructions, etc.

If the software companies have to continue to protect their products from these petty 'hacking' groups all that will happen is that prices will go up as protection gets more and more advanced and the hacking groups will thrive.

When someone has paid the original it is nice to have the peace of mind to have a back-up copy to use in case the original becomes corrupt. Sure, the companies may offer replacement deals at a reduced price, but this may come as little consolation when this occurs to a £25 game or a more expensive piece of software.

I would prefer to see unprotected software, but with some sort of a passworded entry – a random word from a manual, say – which I see as a good comprise to the problem. This, I feel, would get rid of the 'hacking' groups which exist who have such a harmful effect on the profits of the software companies whose hard work goes in to producing good quality software for our machines.

Nigel Stockley
Corfe Mullen, Dorset

VIRUS BUSTERS

Over the past *Amiga Formats* (by the way, they are absolutely brilliant!) I have been reading views on the Virus epidemic infecting our floppy disks. I have become compelled to write to Amiga Format giving some ideas on the subject of protecting our disks. As my computer knowledge is limited, the *Amiga Format* team and readers may find the ideas distressing!

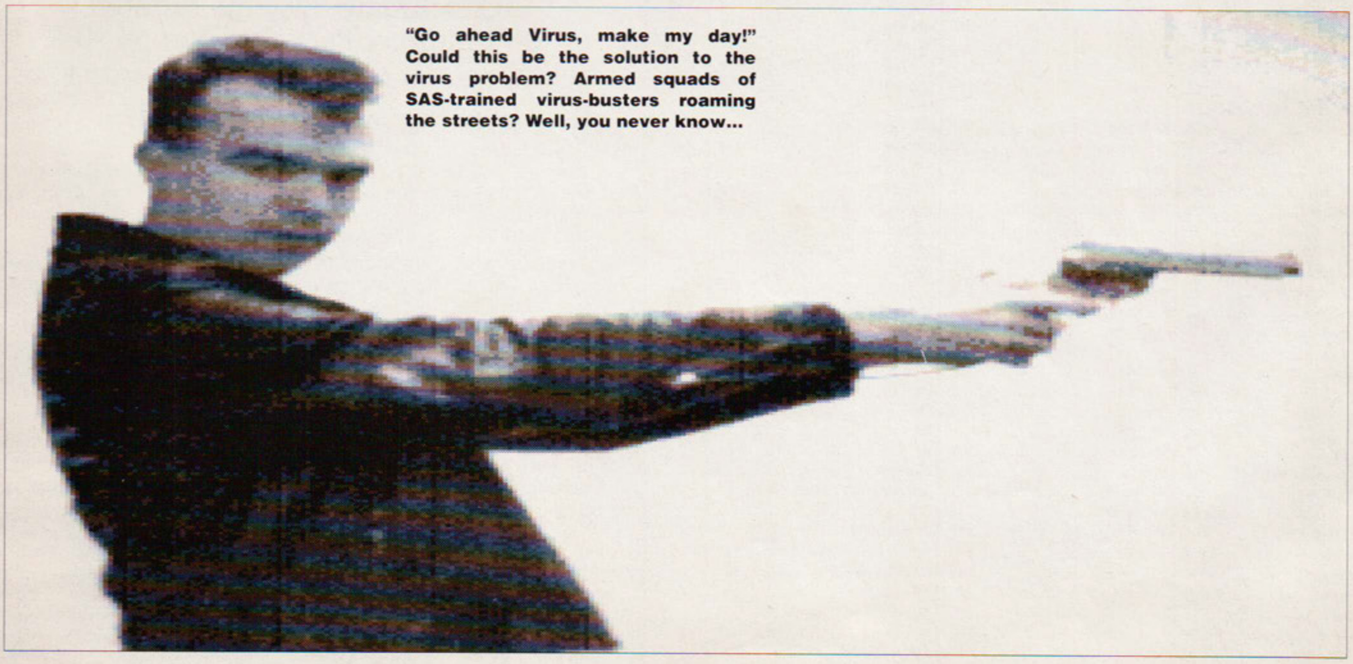
1) Why not have a secret virus killer on every disk supplied by the software industry?

2) What about a dedicated piece of hardware which plugs into your Amiga and wastes every virus it finds on an infected disk?

3) All software should have a secret built-in SAS-trained anti-virus program that can order an attack against any virus disrupting the goodie program.

Michael Tato
Aylesbury, Bucks

Errm... well you never know. The SAS approach may just work...



"Go ahead Virus, make my day!" Could this be the solution to the virus problem? Armed squads of SAS-trained virus-busters roaming the streets? Well, you never know...

GURU's MEDITATION

THE AMIGA ENGLISH DICTIONARY

THIS MONTH'S NEW WORDS

Copperlate *(verb)* The calculations performed when trying to get things to happen on the Amiga's screen.

Pludule *(noun)* One of those interfaces which, when plugged into the back of the Amiga, means it won't quite fit on the desk any more.

Postlethwaite *(noun)* The feeling you get when you open the box of a game you've been waiting for for weeks only to find an instruction sheet – and no disk.

Menopause *(noun)* The mental confusion caused when the phone rings while you are getting a high score and you realise there is no pause mode.

Flapsticate *(verb)* The frustration caused when the metal flap comes off a disk and jams it in the drive.

Areated *(adj)* When the alien mothership is at the top of the screen, the cursor is at the bottom and you die because you run out of room on the mouse mat.

Chappaquidick *(noun)* The guy in the software shop who won't let you test out a £30 game before buying it.

Cordwangle *(verb)* The futile attempts to get all the curls and kinks out of a mouse lead.

Baclurks *(noun)* The creeping feelings of horror when a document crashes and you remember you have not backed it up for an hour.

Yarmouths *(noun)* Expletives uttered when poor collision detection unfairly takes one of your lives.

OH DEARY, DEARY ME

Here's a good one, a real corkeriffic of a cock-up – Issue Nine's spine was the wrong way up. OK, so anyone lucky enough to possess a binder won't have noticed, but it will make a good trivia question for a future quiz.

There was also a problem with the stand-alone *Notepad*, as many of you discovered, and you can find the corrections for that on this month's Workbench pages. Apologies for time wasted and hair torn out over that one.

NEXT MONTH

The June issue will be on sale on Thursday 10th May. It's an extra-special one because it's the only Issue 11 we will ever produce. So it will be a real collector's item – a bit like all the other issues so far. We did think about having two Issue 10s, but decided it was a bloody silly thing to do.

Anyway, Ish 11 will have bags of gorgeous goodies including a fascinating piece on fractals, an indispensable guide to printers, a full guide to spreadsheets, an extended games section, a truly helpful playing guide to Rainbow Islands, several exciting page numbers, absolutely no potatoes.

COMP WINNER

The lucky winner of the murder weekend, courtesy of Electronic Arts and their game *The Hound of Shadow*, is Neil Roberts of Kenilworth, Warwickshire. Happy sleuthing, Neil!

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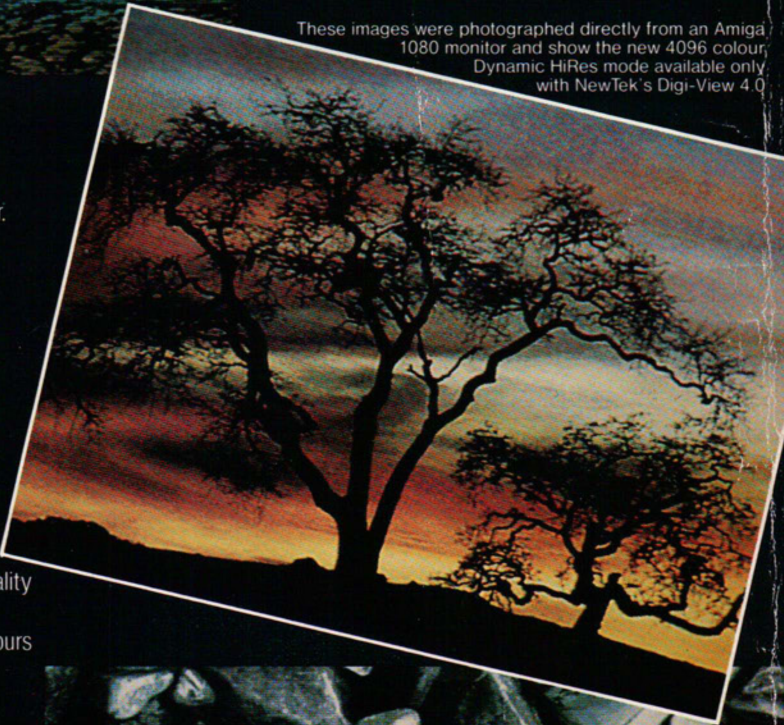
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